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The Accountant's Part in Creative Management

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The vantage point of the industrial accountant for significant participation in management planning is explored in this article with a marked degree of thoroughness. It is noted that the basic duties of accounting, if purposefully and imaginatively carried out, lead directly to interpretative work related to past, present and prospective performance of the company. Three major responsibilities of the accountant are distinguished and developed in discussion.

IN THIS PAPER we are concerned with the accountant in the broadest sense of the term. The meaning is perhaps better expressed by the word, controller. The accountant can hardly have any responsibilities in management planning which are not covered by controllership. Also, most of the controllership functions grow out of the accounting function.

One of the reasons that the accountant properly has a part in management planning is the advantage given him by the historical origin of his function. He has had to work hard to keep this advantage. Historically, the original manager had to seek certain answers in connection with the financial welfare of the business. He had to ask himself:

1. How have we done up to now?
2. How are we doing at the present time?
3. How will we do in the future?
4. What will be the effect of doing so-and-so?

As business grew the manager had to have an aid to help him find these answers. So the accountant or controller got his start. He has often been behind the procession in keeping up to these four questions and that is why the accountant's responsibility is not always a settled question in some fields.

Purpose—To Contribute to His Company's Financial Welfare

The whole purpose of the accountant in management planning is to contribute importantly to the financial welfare of his company. If the accountant or con-

troller cannot look back and find that management has taken action many times based upon his independent findings, he has much more to do before he is ready for true management participation. In this discussion only three major responsibilities of the accountant or controller are considered. His first responsibility is the financial recording and reporting of the past, present and future of the business. He has a second major responsibility in the exercise of what may be called property control. His third responsibility derives from his overall position and consists of management service through advice and counsel to the other members of management, other departments and functions.

FINANCIAL RECORDING AND REPORTING

His first responsibility—that of financial reporter—is, in its broadest sense, the indispensable one. There are those who look upon the financial recording and reporting role in controllership as being a less elevated aspect. I would agree with this viewpoint if the accountant or controller is to be *only* the financial recorder and reporter. However, the broadest possible concept of controllership, in nearly all phases, is built upon the basic financial recording and reporting function. This is true of such phases of controllership as tax administration, internal control, budget control, economic analysis, procedure control, and many others. We elevate the financial reporting function to the highest level of management importance by building the other control phases of the job upon it.

One of the primary management questions cited earlier is, "How have we done up to now?" The accountant has taken great delight in answering this question on countless pieces of paper. Often, he has become so immersed in answering the question dealing with the past that he has had no answers to the other questions involving the present and the future. However, this is not so if the task is intelligently undertaken.

Omitting the field of external reporting and concentrating, for practical purposes, on internal reporting, let us look at what the financial recording and reporting job involves. This function covers the whole range of ascertaining the financial business facts and the reporting of them to management. The reporting of all significant activities is essentially the job of controllership since all of these lead to the company's balance sheet and income statement to a greater or lesser degree and in some form or another. It is important to remember that this is a function of controllership or accounting, even though various portions of it are delegated to other groups which are not in the accounting or controller's department. Many groups in a larger business organization perform

accounting functions and the controller or chief accounting officer should be vitally interested in these activities.

In our company we do not concern ourselves quite as much with what groups perform parts of the accounting function as much as we do with the fact that they are performed well and provide proper information to management. If an area of activity is not being covered adequately, we would concern ourselves with the design of a recording and reporting system to provide the information. We would then consider what organizational group might be best qualified to do the recording and reporting.

The Break-Down of the Recording and Reporting Job

The job of financial recording and reporting breaks down into several segments. First, we have the recording operation itself. Recording systems are usually fairly well organized and substantially accurate. Except in a few areas, this job is basically the simple one of ascertaining the facts. It may involve the operation of an elaborate system or a simplified income and disbursement system. In either case, the task of putting down in money terms the result of business transactions is relatively simple.

However, the adapting of recording systems to real needs is always one of our uncompleted jobs. Many times when a business problem becomes acute and a detailed study is made, it is discovered that the recording system is proceeding blithely along, classifying activities in a manner which does not relate to the problems which need solving. The proper solution requires working backward from the business operations which are to be reported on, determining the phases which may require analysis, and causing the recording system to provide the data. Another thing which often occurs in connection with recording systems is the classification of irrelevant data on a complete parity with significant information. It seems that in making an accounting classification or designing an accounting system, we often look too objectively at the problem. We design a classification which is independent of the uses to which the data will be put. Thus, the user of the data is obliged to select those items which are of consequence and ignore other items of no particular weight.

The second, and more significant, phase of recording and reporting is the reporting activity and consists of:

1. Analysis of the facts.
2. Comparisons with a frame of reference which might consist of a budget, standards, forecast, or even simply a prior period.
3. Presentation.
4. Fulfillment of the reporting function.

Analysis

It is not within the compass of this article to dwell on the various means of accomplishing each of these reporting objectives. Instead, consideration may be given to some of the points at which accountants may improve their techniques to reach the highest possible performance level on these parts of the reporting job. The first step in reporting is analysis. Here, it is very necessary that analysis be confined to the facts that are pertinent to the problems we are trying to solve.

One of the sins of the accountant is often said to be that of analyzing for the sake of analysis. Business management complains often that the accountant does not grasp the purposes of analyses requested and analyzes series of business transactions entirely from a detached viewpoint. Management then has the problem of digging out of the material factors and discarding immaterial data. One of the things the accountant or controller can do is to always be in the position of knowing the business management purposes of reports he is going to prepare. Management is often guilty of requesting data without outlining purposes. It is necessary for the accountant or controller to know the business almost as well as management in order to render a good analytical service.

Comparison

One of the very important stages in reporting is comparison within a frame of reference, such as a set of standards, a budget or a previous period. Here again there are many, many techniques which are available to the accountant, most of them less used than would be desirable. If standards or budgets are not available for comparison, many times average activity levels can be used. Some of the techniques of break-even analysis, separation of costs as to fixed and variable, and other similar procedures are always available in one form or another. It is not necessary for accountants to have standard cost systems or fixed and variable budgets to make good reports. These techniques are merely avenues of approach. The same sort of thinking can be carried into the ordinary analysis of one period against another.

Presentation

Another part of the reporting problem which can stand a lot of attention is presentation. This has become a major communications matter. Presentation requires, first of all, an intensive knowledge of the business, especially to distinguish between material and immaterial factors, and the capacity for condens-

ing and visualizing the pertinent facts. However, although the accountant has often been too busy to take sufficient time with the presentation phase, all accountants have doubtless used some of the simplification approaches of presenting data with visualizing aids such as charts and pictograms. Nothing is worse than an accountant's report which has been merely glorified by the use of a few charts to make the report "look like something". The use of special typography and visualization aids is really effective only when these aids are the basic part of the report itself, with the accompanying tables submitted for more detailed reference. These techniques are worth while only if they have been carefully planned to present the significant story of the report rather than as interest-getting devices or as window dressing.

There are other improvements to aim at in recording and reporting. Accounting reports often show effect without tracing causes. Analysis for the cause of a change is often confused with explaining the source of the change. For example, in analyzing sales income, many accounting reports do show detailed descriptions of the elements of transactions which changed from one period to another, such as price change. They may explain the nature of cost changes from an established base, such as a standard or a budgeted cost. However, this largely leaves the job undone because someone has to go further to determine the way the figures changed or how much they should have changed under expected circumstances.

Accountants can very often, perhaps not always, go beyond the analysis of changes in reports to show causes evaluated against some standard. Cooperative effort by operating, sales and accounting people is necessary to produce a finished job in this respect. The accountant or controller should so develop his procedure that he is able to come to operating groups with a good analysis of a situation and determine the causes for changes. He can then jointly evaluate the significance of these causes so that the presentation of reports can contain comments or recommendations.

Fulfillment of the Reporting Function

The accountant reporter is a combination of a journalist, feature magazine writer and economic analyst. In nearly all cases there is a way to analyze and present data which will tell business management the complete story. The main purpose of the accountant in all these respects should be to know the business well enough and to know business management problems sufficiently to visualize the kind of reporting which is important. It is in doing a top-ranking reporting job that the accountant provides answers to the second, third and fourth

of management's original questions: "How are we doing at the present time?" "How will we do in the future?" and "What will be the effect of doing so-and-so?"

"How Are We Doing At The Present Time?"—The business manager needs the answer to the question, "How have we done in the past?", in order to be able to judge the efficacy of basic policies and basic activities. He also needs the answer to, "How are we doing at the present time?". Often this answer is not available quickly enough for normal business purposes. The formal accounting systems produce significant information somewhat later than it is needed. Many accountants have not found an answer to the problem of evaluating current progress quickly enough.

The question, "How are we doing right now?", usually means from day to day or at a given moment. The accountant or controller has to find his answer in the development of systems of estimating or in procedures for evaluating the current effect of business changes that have taken place since the last recorded results. Major changes take place each day during the month. They do not conveniently await the balancing of the books. If the accountant or controller is not able to develop means of measuring the current effect of these changes where they are significant, business management often has to find the answer elsewhere.

Examples of this type of occurrence are wage rate changes, price changes and variations in the source or type of raw material supply. These are sometimes partly controllable by business management and their effect has to be known immediately. The accountant or controller has available most of the data concerning the activities of the business in prior periods. From these he can develop with the aid of operating people, procedures for evaluating the differential effect of an isolated business change upon the current level of activity. Thus, business management can know its current operating profit level from day to day. Profit levels at previous period rates, prices and cost ratios are known from recorded data. Any significant change occurring at any time can be reasonably evaluated and superimposed upon the previous level as an adjustment upward or downward.

Accountants often tend to veer away from projections or estimations. Perhaps the preciseness of the balancing concept leads to this reaction. The important point is that ready answers to questions concerning the current profit level, place business management in a much better position to make current decisions and, incidentally, take some of the pressure away from formal report deadlines.

How Will We Do In The Future?"—This is another of the questions business management must have answered. A great deal has been made of budgetary control systems, but I would rather see emphasis placed upon just ordinary looking ahead. If the business needs to formalize its looking ahead with detailed sales and cost estimates at various levels expected in the future, well and good. Most large companies have to do this. Whether this looking ahead becomes budgetary control is of lesser importance than that it assist in direct management planning.

What a company may do financially in both the short and longer range future may be anybody's guess, but someone has to make that guess. The accountant has a lot of tools to work with. With the help of others, he is in a splendid position to make an important contribution to management planning. Future possibilities under several different assumptions can always be projected. Future outlooks may represent simple forecasts on the basis of profit rate per unit or per sales dollar. Also, they may include detailed budgets of sales and costs at different assumed levels of future activity. At any rate, the accountant can always find a basis for as good an answer as can be made. If he does not, business management has to work out the answer some other way.

What Will Be The Effect of Doing So-And-So?—These words frame still another of the questions which has to be answered by the accountant or controller. Answering this question is one of the headaches of management planning and often spells the difference between good or poor management. Management has to choose from hour to hour whether certain new business should be taken on, when equipment should be modernized, and how much money can be spent for expansion. Advertising programs, employee benefit plans, and wage negotiations often depend upon the extent to which each will affect the business. Nearly every action that management takes currently requires an answer to the question, "How will this affect us?"

In presenting the accountant's role in answering the question, "How are we doing at the present time?" I made reference to the differential or incremental effect of specific business transactions. I indicated that the accountant *must* develop the technique of calculating the isolated effect of major changes in the current business picture in order to be able to show management the current level of estimated profits, without waiting for books to be closed. The same method of specific estimation is used in calculating the effect of proposed changes, new business, plant expansion, etc. No special or mysterious techniques are involved in these calculations. The accountant only has to know how the

business functions and be able to cooperate with other departments where needed.

Many of the proposed actions which face business management for decision fall into recurring patterns. The accountant with a good recording of past business history, analyzed for effects and traced for causes, will be able to quickly derive sufficient answers to the recurring question, "What will be the effect of doing so-and-so?". When he is constantly called upon to do this, he will then be participating in management planning.

PROPERTY CONTROL

We have now treated, to the extent practicable here, the first of the three principal responsibilities of the accountant—the recording and reporting (related to past, present and future) function—and, in so doing, we have worked in his responses to the four original questions of management identified at the start. The second major responsibility of the accountant relates to property control. This is a fundamental responsibility of the accountant or controller. Property includes cash, receivables, inventories and plant and equipment.

Many separate groups throughout a company are responsible for the custody and use of various kinds of company property. Other groups are responsible for the receipt of funds and the operating control of receivables and inventories. Each of these groups should not have complete accountability for assets under its own control. The accountant or controller is in the most logical position to establish an accountability under which management is assured of the proper usage of assets.

In his position of establishing property accountability, the accountant or controller, being independent of the usage of these assets, can serve as a control source. For example, he is thus able to render to sales management a service in seeing that sales income, customers' accounts, inventories and the capital assets used in the sales function are not subject to misuse. Thus the sales manager, in accounting to higher management for his stewardship of the sales problem, has, in effect, an independent corroborator in the accountant or controller. Top business management is likewise assured that the complete responsibility for usage of assets is properly divided so that no one functional group is able to make improper use of the assets for which it is responsible. Where capital budget and expenditure authorization procedures exist, the accountant or controller's responsibility to top management is to insure adherence to adopted procedures as the results of these transactions are recorded.

The basic approach to meeting this responsibility lies in the concept of recorded control. The acquisition, custody, use, maintenance and disposition of cash, receivables, inventories and equipment by various groups is placed under financial recording control. Reporting to the accountant and controller, combined with verification of reported transactions in property, constitute the basis for the discharge of this responsibility. In fact, the responsibility for property control grows out of the recording function. While the services the accountant renders to management in property control often extend far beyond recording the transactions involved, the fundamental approach to recording and reporting should be used. This calls for studies of costs, comparisons with estimates, continual analyses of depreciation bases and many other analyses concerning the anticipated and actual results of investment in and usage of all types of assets, including cash, receivables and inventories.

MANAGEMENT SERVICE

The third major responsibility of the accountant or controller lies in the field of management service or advice and counsel. In his position as financial recorder and reporter, the accountant or controller is able to be a part of management, rather than simply having a responsibility to management, through this field of management service. Exercising an administrative function, the accountant or controller is able to take an overall view of all major aspects of the business which have an effect upon its financial welfare. His access to the recorded data and the facilities which he can develop for analysis and reporting can be used very profitably in original investigation of changes in the business welfare picture.

These lead him into cooperative efforts with other members of management to improve unfavorable situations. Such situations range over every aspect of the business which is of major consequence. They may involve studies of types of distribution outlets, production material losses, alternative choices of capital investments and long-range financing of dividend and capitalization policies. It would be difficult here to itemize the many things which the accountant can do in this field of management advice and counsel. The accountant or controller has in his records a complete catalog of the activities of the business which can be related in various orders and classified differently for different purposes. This "catalog" represents a complete preview of what is happening in the business and what is likely to happen in the future, insofar as events are predictable.

A Positive Role

Many other functional groups in a fair-sized business are concerned with individual phases of these problems. As a rule, only the very highest levels of management are concerned with all phases of the business. Often only through the controller's or accountant's efforts can all such phases be brought together. The accountant's opportunities in this field are limited only by his imagination, his depth of purpose and his ability to work with other members of management. If he is able to take the overall view without conflicting with the management purposes of individual groups, he will normally be able to make significant contributions to the operating groups and to the business management as a whole. The fundamental suggestion for high level performance in this field of responsibility is that the accountant or controller can work from the business management side of the picture and take the most important business management problems in the order of significance to the financial welfare of the company. By constructive analysis and by cooperation with the segments of the business involved, the accountant or controller can help discover unfavorable spots in the picture and focus constructive suggestion and assistance upon them.

Business management today is faced with many problems. Long-range government, political and economic factors must be studied. The problems of long-range demand and supply occupy much of the attention of members of management. The effect of price levels, dollar inflation and restrictive legislation are also very real to business management. The controller or accountant, if he is well qualified, is in one of the most fortunate positions to be able to guide and counsel business management in the major decisions which affect the financial welfare of his company. If he is truly well qualified in all respects, there will seldom be many limitations on his usefulness in these capacities. Limitations will normally be of his own making. The accountant or controller, with his overall perspective, will thus be one of the creative members of management and his efforts will result in significant contributions to his company.

More Useful Accounting for Indirect Costs

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Two contentions, that the overall burden rate is illogical and inadequate and that fixed costs are time costs and do not belong in inventory, underlie this paper, as does the fundamental proposition that accounting should produce results which are reliable and useful to management. Readably couched, various aspects of the author's thesis are developed by example.

THERE ARE MANY DIVERGENT opinions among business executives concerning the functions and importance of accounting in the business world today. The extremes are represented by two groups of executives whose views are basically opposed in this matter. The first is composed of individuals who believe that accounting is an exact science. Whenever they read a cost sheet which states that the unit cost of producing a certain product was $49.69, they look upon this and any other figure presented by the accountant as gospel truth. In the second group we find those who believe that accountants either indiscriminately "juggle figures around" to suit their own convenience or use ethereal concepts to confuse the issue and camouflage their uncertain estimates with an aura of accuracy and final authority. This situation is aggravated by the fact that most of the individuals in the latter group were at one time comfortably settled within the first camp until the accountant, himself, provoked them into deserting to the enemy.

When Accounting Is Not Geared to Its Objectives

The business executive does not always appreciate the fruits of the accountant's labor. For instance, many department or division heads are not grateful when the accountant meticulously distributes and charges a portion of the general firm name advertising to their area of activity. A somewhat more marked reaction may be expected when the head of a manufacturing concern learns, after granting a purely optional Christmas bonus to employees, that operations have resulted in a loss for the year in spite of the fact that the statements for the first three quarters showed a profit. It may even be that sales have increased substantially during the last quarter. His reception of the accountant's explanation of the effect of unabsorbed overhead is left to the reader's imagination.

The accountant precipitates himself into these situations in many more ways than he realizes. There are too many accountants who have become so engrossed in their own subject material and problems that they have forgotten the fact that the reason for the existence of accounting is that it should serve as a tool or guide to be used by management. In many ways, this tool has gotten so much out of hand that in too many instances the business executive is unable or unwilling to use it consistently and most effectively. When a person either does not understand or is skeptical of a tool, how can he be expected to appreciate its potential value and benefits?

Whatever opinion any given executive may have about accounting, he is nevertheless forced to use it to some extent in the daily pursuit of his duties. There are very few decisions made in the business world today without resort, in advance, to accounting data in some form. The validity of any decision based upon accounting figures depends upon the accuracy and the degree to which they are understood. Therefore, while the accountant is accumulating his figures, he should continually strive to achieve both the degree of accuracy and the method of communicating their significance which will lead to the best decisions. However, many times he forgets the purpose for which his figures are being accumulated. The means to the end has become the end, itself, and accounting data are produced and presented without regard to their use.

Overall Burden Rate Little Trusted or Trustworthy

The indirect cost rate ranks very high in the list of accountants' figures and concepts which are commonly either misunderstood or distrusted by the business executive. This is mainly due to the conventional treatment of indirect costs by the cost accountant. In a manufacturing enterprise, the general practice is to charge indirect costs to inventories according to an estimated or budgeted rate which was determined at the beginning of the period. Thus, all indirect costs are "converted" into the form of inventories. Such costs contained within the ending inventories are not expensed during the period in which incurred but are carried over to subsequent periods. This paper will attempt to point out the inadequacy and incongruity which is inherent within such a procedure.

Recently I asked an industrial engineer for his opinion of indirect cost rates. I wanted to know whether he used them at all in his work. He told me, "Shortly before I was graduated from college, one of my professors deliberately took time out to advise the students not to be bullied into anything by the overhead rate which the accountant had dreamed up. After I started working, I began to realize what he was talking about. While I have to consider direct

costs, I usually ignore overhead rates when I am concerned with manufacturing costs."

This is not an isolated opinion. Similar interviews with other executives have led me to the conclusion that most find many uses for the direct cost figures presented by the accountant, but they either ignore the indirect cost rate or use it naively whenever they consider manufacturing costs in making a decision. What should the accountant do to remedy this situation? He should retrace his steps and completely review his thinking about indirect costs, their nature, their definition and classifications, the reasons for computing them, methods of achieving the desired degree of accuracy in computation, and how to communicate the true significance of reported figures so that they can be used as a basis for valid reasoning by executives.

Indirect manufacturing costs are usually defined as costs necessary to the production of goods, which cannot conveniently be identified with any specific product or lots of product. Therefore, the accountant artificially provides for this identifictaion with a rate based upon averages. With *one* rate (on an overall plant or individual departmental basis), he attempts to charge specific products or lots of product with fixed, semivariable, and variable indirect costs. When he does this, he can be compared to the man who attempts to wash his hair with coconut oil shampoo and cold water, and ends up with a gooey mess in his hair which he has difficulty in washing away. Just as in the case of the shampoo and water, variable, semivariable, and fixed costs have definite inherent values and uses. However, when they are combined in one base and rate, these values are usually hidden within the "gooey mess" that is likely to result. There simply is no *one* base which maintains a common relationship with all three classifications of indirect costs. Furthermore, the various types of indirect costs have no consistent relationship with each other.

A Study in Lack of Relationship

As already stated, the validity of a decision is largely based upon the accuracy of the figures upon which the decision is based and the degree of understanding of them possessed by the person making the decision, concerning these figures. Well then, how *accurate* is the accountant likely to be when he lumps indirect costs in one rate and applies them to work in process in this way? The very fact that the ledger contains an account called "over and underabsorbed overhead" confirms the likelihood of error. At the end of the fiscal period, this account contains the dollar amount of error in the estimates of overhead costs and/or the base used for that period, how many executives have a good grasp

of the meaning of the figures in this account or more important, of their implications? Furthermore, of those executives who do have some understanding of the over or underabsorbed overhead figure and its effects upon the inventory and cost of goods sold figures, how many realize that this figure is not composed of one error in estimate, but of many errors which have resulted from over and/or underestimating both indirect costs and the base used to apply them to work in process?

The entire process involved in using *one* indirect cost rate is fraught with potential error because of the fact that many of the individual indirect costs have nothing in common with the base through which they are applied except the fact that the accountant determined an average relationship between the estimated figures for the costs and the base involved. Unless the accountant makes an absolutely correct estimate of both the cost and base figures (disregarding the effect of compensating errors), it is a certainty that indirect costs will not be charged correctly to products as they are being manufactured.

In the first place, the base itself is subject to question because it may contain incompatible elements. For instance, the direct labor dollars for a certain department of one company contained the following elements:

1. Piece-rate payments for work usually performed in the department.
2. Eight cents per hour worked, regardless of productivity, in accordance with a union agreement.
3. Hourly payments for idle time, based upon the workers' average weekly earnings.
4. Piece-rate payments for work done over on units of product damaged in a subsequent stage of production or spoiled after completion.
5. Piece-rate payments and hourly rate payments for work performed in other departments while there was not sufficient work within this department.
6. A two-hour allowance per week for one worker, for time spent in tending a coffee urn, and preparing coffee for other workers.

When all these elements are involved, how can a relationship between indirect costs and these "direct" labor dollars (the base most frequently chosen by the cost accountant) be determined?

Even if the accountant could manage to end up the fiscal year with no discrepancy between the indirect cost applied and indirect cost accrued, this would by no means indicate that the indirect cost rate has been based upon correct estimates. In this situation, it is probable that compensating errors have been made, *i.e.* that some costs were overapplied and others were underapplied. The greatest margin of error lies in those costs which, strangely enough, are easiest to estimate beforehand on an annual basis, the fixed and semivariable costs. Since this type of cost has no logical connection with the base chosen and since it is difficult to forecast the base accurately, it is not surprising that over or underapplied indirect cost is the usual result.

This is also the case with the variable indirect costs which are applied according to a base with which they have little correlation. For instance, when a labor dollar or hour base is being used, the power cost of running the machinery and the cost of its maintenance do not have adequate correlation with this base, which contains a considerable amount of setup time and paid-for idle time, periods during which the machinery is not in operation. Certainly it seems logical that, over any given amount of labor hours or dollars, the power and maintenance costs should be applied at a different rate if the labor is devoted to one large continuous order rather than many small orders. Under these circumstances, a machine hour rate for these and similarly correlating costs would accomplish the desired result much better than a labor rate.

A Governing Principle in Applying Multiple Burden Rates

If the accountant wishes to achieve any reliable degree of accuracy in his indirect cost rate, he must first realize that using *one* cost rate is entirely inadequate. The *one* indirect cost rate now being used on a departmental or plant-wide basis should be replaced with several different rates. It is conceivable, in the case of a plant manufacturing a variety of products in several different departments using both hand and machine labor, that a maximum degree of accuracy in applying all indirect costs would require as many as twenty five different rates. This is obviously beyond the limits of practicability. However, using one different rate for each department would not be the solution either. Several different rates in a departmental basis are necessary if the indirect cost rate and its application are to be accurate enough so that executives can rely upon the resulting figures in making decisions.

At this point it might be well to ask exactly how many rates should be used. No one specific figure will supply an answer which is generally applicable throughout all industries and the companies within these industries. This answer must be given on an individual plant basis, depending upon the circumstances within the plant and its production departments. The extent to which indirect cost rates are to be used, the desired degree of accuracy, the types of indirect costs incurred, the amount of data accumulated concerning these costs and the possible bases to apply them—as well as the expediency factor—must be considered before a decision can be made. However, there is a governing principle to keep in mind while working on this problem. Any one rate should deal with only those costs and that base which are interdependent in the sense that any quantitative variation in the base will be followed by similar variation in its related indirect costs, or vice-versa, because only factors common to both can cause this variation.

For instance, the level of productive activity is one factor which will exert a similar effect upon labor dollars (the base) and the indirect costs of compensation insurance, payroll taxes, and any other costs based upon annual payroll, such as pension and bonus plans etc. If it is found in a plant that still other costs are similarly related to a labor dollar base, then they also should be applied through this base. While it is not necessary to establish a perfect relationship in the sense that the base and related indirect costs will always vary proportionately, there should be a definite tendency in this direction.

Another good example of this governing principle would be the use of a machine hour rate to apply certain indirect costs such as power, lubricants, nondurable tools, and machinery and tool maintenance. Theoretically, these costs are a function of running machine hours. They are marginal to the extent that they vary proportionately with each additional hour that the machinery is running. Thus, if at the end of the year a greater or lesser amount of machine hours have been accumulated than the amount estimated at the beginning of the year, it does not necessarily mean that over and/or underabsorbed overhead will result. These costs logically accrue on a marginal basis with each additional machine hour and, if there have been less machine hours than expected during any given period, in a similar fashion there should be a reduction in the expected amount of the relevant indirect costs.

I do not claim that the accountant can achieve such a perfect relationship between all marginal indirect costs and their related bases, so that over and underabsorbed overhead will be eliminated. One reason that it cannot be is that some costs theoretically should be marginal in nature i.e., variable in terms of their related base but (not having read this article) they are not aware of this fact and will behave erratically at times. Furthermore, as long as prices continue to fluctuate and human beings continue to make errors, these and related factors will produce forces tending to destroy the validity of any indirect cost rate. However, by accounting for indirect costs in the manner outlined, that is, by applying any marginal costs to units produced, the accountant has eliminated the sources of error over which he does have control and has made a great forward step in getting figures which executives can accept wholeheartedly.

Semi-Variable and Fixed Costs Are Time Costs

At this point the reader may be puzzled because I make no provision for applying semivariable and fixed costs to inventories. I deliberately do so simply

because they do not belong in inventories. They should be expensed during the period in which they are incurred. The case for this will be built up here by first eliminating the term semivariable from the discussion. Certain costs, such as indirect labor, are defined as semivariable because they are in reality a combination of a number of costs, both variable and fixed. Wherever this is the practice, the variable and fixed costs should be separated. The variable costs should be applied to inventories through some related base and the fixed costs should be dealt with in a different manner (which will be covered shortly).

However, there is one more definition of semivariable cost which is in use today. I refer to those costs which are subject to variation in steps, at certain levels of production between zero and maximum for any individual plant. Such a representation may be accurate but, practically speaking, the operations of a going concern do not vary over all possible levels of productive activity between the absolute minimum and the absolute maximum, especially within any one fiscal period. The executive and the accountant are generally concerned with the actual range of productivity expected and experienced. Within this range, most semivariable costs, such as supervision and service department costs tend to be fixed. I admit that they are subject to variation when we consider all possible levels of productivity but within those surroundings in which the executive and the accountant work and make their decisions—the actual range of productivity experienced—semivariable costs act no differently than fixed costs. (The few semivariable costs which contain more of the variable than the fixed element will be reserved for later discussion.)

According to the marginal approach, fixed costs cannot be considered costs of manufacturing units of product because of their nature and, therefore, they should not be applied to these units. In the first place, there are the shut-down costs such as depreciation, certain taxes, rentals, certain insurance and salaries, etc., which will continue to be incurred if no production at all takes place. Therefore, if they are the cost of *not producing goods,* how can they logically be also called costs of producing goods when production actually does take place. These costs are not affected by any decision to resume production, and the assumption of the accountant that they are being "converted" into the form of produced units, when he applies them to these units, is inconsistent and disregards the inherent nature of these costs. These shut-down costs and all other fixed costs accrue strictly on a time basis and the services purchased when these costs are incurred are being consumed with every passing second. Once this second has passed, the services consumed are irrevocably lost, whether or not the company has benefited therefrom.

The Example of Real Estate Taxes

Real estate taxes provide a good illustration. This cost is incurred and paid on a strict time basis, usually a year. The services purchased have nothing at all to do with the rate of productivity within that year. The firm has purchased the right to keep its place of business in a chosen location and to maintain any level of production within that place of business for each second within the year for which taxes have been paid, without the interruption of tax liens and foreclosures by civil authorities. When any one of those seconds have passed, a proportionate part of the tax cost has passed, regardless of whether this second took place during the day when the plant was working at full capacity or during the night when the watchman was watching at full capacity. When the year ends, the direct benefits derived from this cost come to an end. Thus, the cost should be charged to the period when the services they represent were consumed, rather than being carried forward to a subsequent period in the form of inventories.

This cost, and other fixed costs, was not incurred as a production cost. It was incurred in order to *prepare for production,* to provide the arena within which any level of productivity can take place, limited only by the physical limitations of that arena. Once this cost has been incurred, production can and usually does take place and it is only then that the costs of producing goods are actually incurred. Only those costs which would be incurred or would accrue if a decision were made to produce one additional unit, should be considered the costs to be capitalized in the form of inventories and carried forward to the period when the unit is sold. The costs of providing the arena for production are governed by and consumed on a time basis and should be so charged.

The Example of Machinery Costs

Thus we see that the benefits of services purchased when costs such as rents, taxes, superintendence, insurance, and service department costs are incurred, are available on a time basis over a considerable range of production. If the enterprise does not utilize these services to their fullest extent during that period of time when the benefits were available, they are "lost and gone forever." Once the time unit for which these services have been purchased has passed, an additional outlay is necessary if similar services are to be available in a subsequent period.

While the arguments which have been advanced on this point may seem reasonable for depreciation of plant costs, as an example, it may not seem reasonable for depreciation of machinery because machinery is actually used

in the production process and because of the accountant's concept of the services of machinery as being converted into the form of inventories through wear and tear. The apparent dilemma may be resolved by recognizing that there are two elements within the cost of purchasing machinery and using it to produce goods. The fixed element, the actual purchase price, is governed by the time function and should be charged off in the same manner as other fixed costs. The marginal element, the cost of repairs and preventive maintenance, is accrued with each additional unit produced by the machinery. That is the only cost which should be charged to inventories.

A closer look at the employment of machinery in production confirms this. I am convinced that obsolescence is the greatest limiting force upon the beneficial service life of machinery, rather than actual physical wear and tear. Let us take the hypothetical case of a company which purchases two identical machines simultaneously. One is subsequently kept running at maximum capacity over its service life while the other produces only at one half maximum capacity. Will the firm use the second machine twice as long as the first machine or will the difference in their service lives be insignificant compared to the difference in the theoretical wear and tear these machines have experienced?

If it were possible to find an actual case such as this, I believe that the service lives would not be very different, with obsolescence playing the major role in the decision to replace them. Therefore, the service purchased with both machines was not the service of producing a definite amount of units over any period of life, but the service of *producing any amount of units over a definite period of time.* This is the case with any machinery. When a given time period has passed, any machine's service life potential within that period has also passed and should be charged off in that period.

Some accountants may still insist that the units produced have consumed the service potential and that the period during which those units are sold should be charged with the cost of that service potential consumed. I have but one question to ask of them. In the illustration of the two machines in the preceding paragraph, did each unit produced on the machine working at one half capacity consume exactly twice the amount of service potential represented in the purchase price of the machine, compared to each unit produced on the machine working at full capacity? "No," is the obvious answer.

Each unit produced on both machines "consumed" the services of those machines in terms of the machine time required to produce that unit. Service consumption was not governed by the total number of units produced within any period. In fact, the production process did not consume those services.

It was the passing of time which decreased the remaining services available in the machine, whether or not any production at all took place as that time passed. Therefore, when the accountant charges to one unit twice the amount of service potential in terms of dollars than to the other unit, he is not only being inconsistent in terms of his own thinking, but he is embarking upon a process which many times leads to incongruous results which do not present the cost picture in its true light. This is so because he has tried to intimate that accounting is an exact science in an area where it is obviously anything but an exact science. I use the term, to intimate, advisedly, because if the accountant really wished to reduce cost accounting to an exact science, he would certainly not use one base to apply all indirect costs to work in process, because of expediency. By doing this (and many other things with which this paper is not concerned), he gets results which are of doubtful value and often succeeds only in antagonizing business executives.

Chameleon Costs, e.g., Payroll Taxes

There is one more group of costs which requires consideration. This group consists of those costs which cannot universally be placed within the fixed or variable classifications because the proper classification may differ with different companies. Payroll taxes provide a good illustration. For any individual worker, this cost will be marginal until he reaches the point at which he has earned $3,000 in any one year. Beyond that point, the cost remains fixed. However, we are not concerned with any one individual worker but with a labor force. For this type of cost, the choice between treating it as a fixed or a marginal cost should be governed by the actual situation in the particular company. In the case of payroll taxes, if most production workers of any company earn $3,000 or less annually, because of the level of the wage rates and/or a large turnover rate, then this cost is clearly marginal and should be treated as such. If on the other hand, there is a low turnover and most workers earn $3,000 or more annually, then this cost is fixed over the actual range of productive activity experienced by the company and it should be accounted for in the same manner as other fixed costs, for reasons already explained.

However, there are many firms about which we cannot generalize and say that workers will earn either more or less than $3,000 annually. In these firms, the accountant should use his discretion in light of the actual circumstances. If he decides that payroll taxes would be best considered as a marginal costs, he should transform it into a marginal cost by using an equalizing rate which is somewhat less than the actual rate being accrued on the first

$3,000 payroll for each worker, so that the effect will be to apply an equal amount to each of the units produced during the accounting period. However, if circumstances indicate that the cost of payroll taxes is more fixed than marginal, then the equalizing rate expedient should not be used at all.

There is only one broad generalization which can be made concerning this type of cost. It should not be considered as being marginal during that part of the year when it is actually being accrued and fixed for the remaining portion of the year. To apply this type of cost to units produced during one part of the year alone, would make the resulting figures misleading for the purpose of most decisions where consideration of costs is important. This cost must not be confused with machinery costs, for example, wherein there are both a fixed element (depreciation of original costs) and a marginal element (repairs and preventative maintenance) and where these elements have to be segregated and accounted for differently.

False Costs Affect Competitive Situations

In the preceding paragraphs, I have discussed a method of accounting for indirect costs which departs from the conventional method in many ways. Principally, it calls for individualized overhead rates—rather than company or plant-wide rates—and the elimination of fixed costs from product costing. The readers' reactions will no doubt be as varied as the opinions of executives concerning accounting and accountants. The method is not a panacea which will cure all the ills in accounting for indirect costs. However, I believe it is preferable to the conventional method, not only on a logical basis but, much more important, because it would eliminate some of the incongruous results of accounting which plague the executive and the accountant today.

I am reminded of such a situation which occurred only recently. Two competing manufacturers of women's apparel turned out a skirt which was nearly identical because of similarity in design and because both used the same fabric with a highly stylized print. Manufacturer A's selling price was $4.75 while Manufacturer B's price was $3.75. Naturally, A's selling price became $3.75 promptly, despite the fact that, according to his cost sheet, he was making no profit at this price. It then happened that one of B's cost sheets became available to A. The management was amazed to see that B appeared to have a comfortable margin at $3.75.

How was this possible? The companies had very similar establishments in the same district and their annual gross sales were nearly the same. Comparison of the cost sheets revealed that the difference in direct labor and material was

negligible but that drastically different rates per labor dollar were being used for indirect cost allocation. It was this which made it appear that virtually the same skirt was being produced at two different "costs." As a matter of fact, at the lower price both manufacturers were producing the skirt at a loss, for B is the manufacturer referred to at the beginning of this paper, who, having shown comfortable profit on all interim statements, wound up with a loss. "Unabsorbed overhead," his accountant said!

The situation with respect to this product need never have occurred. The cost sheets of both companies showed similar costs for direct labor and material. If the marginal principal (material and labor are marginal costs applied to work in process according to a rate using unit of product as the base) had been used for indirect costs also, there certainly would not have been this large discrepancy in comparative costs. If the companies had continued this approach into their indirect costs, applying only marginal costs according to several rates and bases, the resulting figures would certainly have been more valid.

Executive "Scratch Pad" Analyses Voice a Protest

The conventional single indirect cost rate also plagues other executives than those concerned with pricing. Executives concerned directly with the production function are an example. When these men have to make a decision in which production costs are one of the main considerations, there are three courses of action open to them. They may take the indirect cost rate at its face value and give the overhead thus computed full weight along with direct material and labor. (Actually, there are few who do this.) They may simply ignore it entirely and look only at prime costs, thus overlooking pertinent costs which, many times, would properly affect decisions. Or they may—those executives who have a good grasp of accounting figures—use supplementary figures of their own to replace the indirect cost rate.

What sort of figures will this group of executives employ? They consider mainly the pertinent variables. For instance, if a purchase of new machinery is being contemplated, the unit costs of product for both alternatives will not have one lump figure for indirect costs but separate figures for power, tools, maintenance, etc. Other figures may be found which the accountant would ordinarily not bother with at all.

By doing this, these executives are justifiably demonstrating their protest against the accountant's assumption that he is qualified to exercise judgment for them. Perhaps he does not realize it but, in many of his reports, he may as well have added a footnote to this effect, "Here it is in black and white!

You may be an executive, but the only prerequisite for your position is the ability to add two or three of the figures I present to you." This is exactly what the accountant says when he applies both fixed and variable costs to inventories and gives the executive a complete unit cost of $49.69.

I offer these words of advice to the cost accountant. Take the fixed costs out of inventories. Present a unit cost figure of marginal costs only and, as an adjunct, present also an analysis of fixed costs. Throw the overhead and its breakdown over to the executives' area of judgment and let them do the rest. The results will lead to greater understanding of and respect for accounting and accountants, through consistently reliable and valid figures.

Continuous Methods Work Will Control Clerical Costs

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It is within the theme of the present paper that there is a team—top management, methods staff (if warranted by company size), clerical supervisors, and clerical workers—which, performing continuously and constructively, can effect marked improvement in efficiency of office work. The need for such improvement is stressed at the start. Recommendations for orderly conduct of methods of work are given.

THE ECONOMIC CONDITION OF THE COUNTRY today would indicate that the reduction of clerical expense is one of the few possible sources of increased profit. These inflationary times intensify the need for cost control in this line, since there is very little likelihood of reduction in wages, salaries, material costs and other expenses of doing business. The prices which we pay for things in business are continually increasing and there seems little possibility of their decreasing in the foreseeable future. Added to this is the increased paper work required of business in these modern times, much of it beyond our own control. In fact, possibly the greatest single factor in this increase is the overwhelming burden of statistics, records and reports required by federal and state governments.

To bring home the magnitude of the field for clerical savings, it is only necessary to refer to information from the Bureau of Labor Statistics. In 1900, at the turn of the century, less than one million of the people of our country were engaged in office work. By 1940 this number had increased to approximately four and a half million, or 350 per cent over the 1900 figure. During the same period factory workers increased only 75 per cent. During the years 1940 to 1948, office workers increased to seven and one-half million, or 650 per cent over the number in 1900.

There Is a Permanent Place for Methods Work

All too many accountants, while most conscious of cost and cost controls for others, take no cognizance of the cost of their own activities. This may be due in part to an absorption in the routine duties and in the service and supervisory problems which fall to the accounting department. It may be due in part to the conviction that the accounting department is a necessary activity and that the cost is only incidental. Nevertheless, every dollar of accounting

cost is just as much a cost of doing business and is just as surely a charge against the profit and loss of the corporation as is every dollar spent in the production, sale and distribution of its products.

Since, as was stated before, there is very little probability of reducing the salary rates, our opportunity for savings lies primarily in controlling, so far as possible, the quantity of clerical work performed and more important, in simplifying the work we do so that it may be done as efficiently and inexpensively as possible. Time and motion studies, streamlined methods, assembly line production, and operating efficiency have been familiar factors in the manufacturing phases of business for many years past. On the other hand, it has been only in the last ten to fifteen years that any significant progress has been made in applying the same techniques to office methods and control of clerical costs. Vast segments of industry and business have done little or nothing in this field. Other firms are just starting. Some relatively few larger corporations have developed highly-organized staff activities, of which methods and work simplification is a most important division. Even in these latter cases, however, there still remains a fertile field for cost reduction.

I believe that methods work should be a continuing activity in any large clerical organization. Conditions change and this introduces new problems and requires new methods. Experience also indicates that with voluminous operations improvements can always be made. Moreover, it is advisable to resurvey every large group of employees at least once each year to make sure that prescribed procedures are being followed. Likewise, a periodic check seldom fails to bring to light something which may have been overlooked in previous surveys. Constant attention should be given to making sure that each employee is performing a fair day's work. Under any circumstances, there is a tremendous field for clerical cost reduction through work simplification, and methods work should be and usually is a highly profitable activity.

Locating Responsibility for Methods Work

In planning for a method or work simplification program, one must first determine who shall perform the methods work and what organization shall be set up to accomplish it. In a large corporation it may be necessary to have a separate staff group, possibly of considerable size, to operate effectively. It may be thought advisable to have each department—sales, manufacturing, finance, engineering, research, etc.—organized to do its own methods work.

More often, however, it will fall to the lot of the controller or the chief financial officer to organize and provide the leadership for clerical methods

work in the entire company. This is a logical decision for management to make since, in most corporations, by far the largest volume of clerical work is performed in the accounting and finance department and the controller and his staff are presumed to be, and usually are, experts in efficient clerical methods. In a smaller corporation it might fall to the lot of the office manager to supply the leadership in this field. This would apply especially to companies of such size that most of the clerical work for all departments is performed in a general office under the direction of an office manager.

In any event, the individual selected to head up this type of activity should be well trained, for the success of the program depends very largely upon his ability and enthusiasm. Even in those companies in which the volume of clerical work is small enough not to require formal organization, methods work is no less essential and effective just because it must be performed by supervisors or, in some instances, by the working personnel themselves.

In the larger corporations the existence of a man or a group of individuals whole sole duty is to survey existing procedures and recommend changes for greater efficiency and economy, is productive of substantial benefits. Methods work is necessary in the performance of daily routine duties and in planning for special assignments and requirements. Where no methods group exists, time must be taken from regular work for this activity and, as a result, those to whom the assignments are given do not always have the time to study all phases of the problem objectively. All too often plans are made hastily and are ill-considered and incomplete. On the other hand, the members of a methods group are able to give their undivided attention to the subject, to take the time to develop all phases, and to determine the best method for accomplishing the desired end. Beyond the fact that personnel in such a group has been selected because of individual aptitudes, they become more and more skillful and adept by specializing in this type of work.

An essential step in entering upon a clerical methods program is to have the president and other top executives of the company thoroughly sold on the need for and the advantages of methods work. Perhaps they are reluctant to assume the expense of methods work or of setting up a methods organization. Perhaps they may fear personnel difficulties. Perhaps the effectiveness of this work may be an unknown quantity to them. However, methods personnel are not able to activate a methods program without the full support of top officials. As a staff organization, the methods people have only the authority inherent in their knowledge. They cannot order anyone to do anything. Therefore, they must have their projects approved by line executives. The best con-

ceived plans of the methods staff are nullified without top executive support or by half-hearted and doubtful acceptance.

Nevertheless, most of our larger corporations have sufficiently complex problems in engineering a large volume of clerical operations amply to justify the expenditures involved in such a group. Top management must, therefore, be persuaded that, although an initial investment may be required, the accomplishments of a methods staff can be determined in dollars and cents. Actual savings realized can be measured against the cost of maintaining the group and the size of the group can be controlled in relation to the results obtained.

Duties and Qualifications of Methods Staff

Let us inquire at this point into the type of personnel required for an effective methods staff. In order to highlight the required qualifications, it will help to state briefly the functions of a procedure and methods group. They are as follows:

1. Conduct research into the best clerical methods successfully employed within the corporation or in other businesses.
2. Prepare formal written procedures covering clerical operations in existence within the corporation.
3. Standardize clerical procedures throughout the company, so far as is compatible with varying local conditions.
4. Survey existing procedures and clerical methods for improved efficiency.
5. Design and install simple low-cost clerical procedures.
6. Set clerical performance standards.
7. Determine work loads and the number of employees required to perform each operation.
8. Investigate office equipment, machines, and other facilities, and make recommendations concerning specific applications to clerical procedures.
9. Survey and make recommendations concerning office space and efficient layouts.
10. Survey and make recommendations for effective and efficient filing systems.
11. Design forms and engineer their standardization.
12. Set up standards for control of printing and stationery purchases and costs.

The qualifications of personnel capable of carrying out the above responsibilities effectively are education and training along either accounting or industrial engineering lines or both, and familiarity with office methods. Requirements are, an analytical mind, creative ability, imagination, thoroughness, persistence, tact, patience, and ability to teach others and to sell ideas. Finally, and perhaps most importantly, methods personnel must be able to deal successfully with top company officials in order to implement system changes and installations. Failure or inability to do this will negate much hard work which should, if improved systems are installed and properly administered, result in additional company profits through reduction of clerical expense.

This sounds like a large order and, in fact, it is. Only a specific type of indi-

vidual combines all the necessary knowledge and qualifications. If a company, in organizing a comprehensive program for methods work, finds that there is limited or no personnel available among its own employees, men of the proper qualifications may be found in the public accounting or industrial engineering fields or among the staffs of engineering and business consulting firms.

On the other hand it is my firm belief that good methods men may be developed through proper training. Methods work and work simplification are based on common sense. Someone has defined methods work as "the organized application of common sense to finding easier ways of doing work". It is true that there are certain basic personal qualifications necessary in about the same measure that certain personal traits are required for research or any other type of so-called staff or creative work. However, beyond this point methods men can certainly be improved and, I believe, made, through proper training, experience, and background.

A Standard Procedure Desirable for Methods Studies

The paper work required in methods studies may be and should be reduced to a standardized technique for efficiency, orderliness and maximum results. A standardized technique provides for the uniform recording of information. This is a distinct advantage when work is conducted by a number of different individuals in numerous locations, with variations in systems and procedures among the localities. Such a standardized technique takes the form of a prescribed procedure which comprehends definite successive steps and the use of standardized organization charts, office layout diagrams, clerical flow charts, clerical operations schedules, job descriptions and forms flow charts.

Through the use of these standardized devices, a complete and intelligible picture is obtained of all the activities of a given clerical group, and all the information is developed to indicate whether or not an efficient job is being done. Such a technique not only gives a pattern which standardizes the work of a survey, but also furnishes an excellent means for checking the completeness of the information obtained. An individual familiar with it may easily interpret work done by another individual. Furthermore, if it becomes necessary to replace an analyst with another in the course of a survey, the work may be picked up at any point and completed without retracing any of the previous steps of the investigation, as might occur through lack of complete or intelligible information. The formalized and standardized technique also provides a ready and comprehensive means for instructing inexperienced men in the proper con-

duct of a survey. It gives them a pattern which indicates to them the successive steps to be taken and insures that no important step is omitted or overlooked.

Goals of Methods Studies

Clerical studies are made for the purpose of recommending improvement and increased efficiencies in existing procedures, elimination of duplication of effort, leveling of peak operations, improvement in the flow of work, centralization or decentralization of functions, and proper allocation of the work to competent people. All this leads up to one end point—cost reduction.

It is not sufficient to determine what the cost of accounting is and how it compares with the cost in the past, but determination must be made as to what the cost of clerical work should be. The cost may be lower than in prior periods and still be too high. By establishing proper time allowances for necessary operations, after unnecessary operations have been eliminated, it is possible to build up an overall standard to which actual costs can be logically compared. This, in turn, forms a basis for budgets covering varying rates of operation, on which to control accounting clerical costs at all rates of business activity.

In approaching any methods study the following questions should be asked:

1. Is the work being done necessary?
2. Does it duplicate work being done elsewhere?
3. Can it be combined with some other work?
4. If it is necessary and is not duplicating other activity, is it being done in the most efficient way?

The Survey

Each methods study falls into four main parts. The first is the survey. It determines and records the fact of existing operations and analyzes their effectiveness. It ascertains the volume of work, its flow, the man hours required for each operation, the type of positions involved and the type and number of personnel required, after determination of proper work loading. Duplication of effort between individuals and groups is clearly brought out.

Procedures Design

If the procedure appears to be basically inefficient, unsatisfactory or unsuitable, the methods study enters a second phase, that of design. The methods personnel bring into play their wide knowledge of clerical methods and systems and design a procedure which will accomplish the work more effectively

and at a lower cost. This may take any number of forms, ranging from modifications of the existing procedure to proposal of an entirely new method, change from manual to mechanical procedure, or change from centralization to decentralization of the work or vice versa.

The steps given below should be followed in attempting to arrive at a new procedure:

1. Analyze the time consumed by the various operations under the present procedure.
2. Analyze the reports required by the present procedure and interview their recipients to determine to what extent the reports are fulfilling the objective for which they were originally intended.
3. Redesign the reports if necessary. Very frequently the manner in which a report is prepared will determine the kind of system that must be employed. In designing such reports the most important element is to be certain that all necessary information has been included and that the report will completely meet the final objective.
4. Determine the over-all procedure that will be used. The ingenuity of the methods man must be relied upon to bring up different routines which can be used to accomplish the final result. He must be expected to know more than one way to do the job and must give careful consideration to each of the several ways. He must evaluate each way to be certain that he determines upon the one which will produce the best results at the lowest cost.
5. Prepare flow charts and operations charts to examine the various possibilities. These will develop the total time, broken down by operations, which will be required under each possible plan. It is important that the date or time be indicated at which each phase of the operation must be completed. The over-all time of one procedure may be less than that of another but the time at which each operation is scheduled may involve so many peaks that it is necessary to employ a larger force than would be needed if the work could be leveled off.

Installation

When a satisfactory new procedure has been designed, the study moves into its third step, that of installation. This is where the sales ability of methods personnel comes into play. Since he belongs to a staff group, a methods man has no line authority. He must sell a proposal to line supervision solely on its merits. A good procedure man will have done a considerable amount of this selling during the survey and design steps of the study. He will have handled his assignment in such a way as to gain the confidence of the line supervisors involved in the operations he has been studying. He will have discussed the various phases of the problem with them and will have solicited their help and suggestions. He will have relied upon their knowledge of the details to guide him and will have discussed his conclusions with them.

If this is skillfully done, the first-line supervisors will have had such a large part in the study that their cooperation in its installation will be assured. If this is the case, selling the new proposals to higher levels of supervision and management will become a joint project of the line supervisor and the methods man, which will increase the probabilities of its acceptance.

The installation of a new project must be carefully planned, not only as to proper acceptance by all individuals and groups concerned, but also as to timing, training of personnel and induction of the new procedures without disruption of the work of the department. It may be possible to complete the installation at a given time, such as the beginning of a month. Again, it may be advisable to install it piece-meal over a period of time. In either case, the methods man should be active in the installation, either through assuming the entire responsibility or working in conjunction with, and in advisory capacity to, the line supervisor.

Follow-Up

After the installation has been successfully completed, the study enters the fourth step. A project is not complete without a systematic follow-up to assure that the new system is working smoothly. There are always adjustments to be made, certain difficulties may develop, or further coordination may be required. The methods man gives all such matters his attention until the new system is working smoothly, after which its supervision and administration is solely the responsibility of line management.

The Task of the Clerical Supervisor

We have discussed the activities of methods personnel as such. We may consider where the line supervisor in the office fits into the picture and his responsibility for and contribution to cost control through methods work. The supervisor's job is to oversee the work of the people under his direction. A clerical supervisor must develop a high degree of "cost consciousness". It is essential that he realize that time is money in the accounting department as well as in the operating department. Since salaries are paid for elapsed time, the supervisor must plan so that work is done as expeditiously as possible and that no nonessential work is performed. From this it will be seen that the supervisor inherently has in his regularly constituted duties a high degree of responsibility for methods work and work simplification.

If he discharges his supervisory responsibility properly, it should be a full-time job, not the part-time job which some supervisors of the old school made it. In times past the individual chosen from the group to become supervisor was likely to be the one who could turn out the most work, and so he was little better than a pace setter. If a supervisor performs the work which should be done by the rank and file employee, it will invariably cost more to get the

work done, if for no other reason than that the supervisor's rate is higher. This is evidently not a way to reduce office costs. More important, however, the cost of operating his department will be increased by inefficient methods as a result of lack of proper supervision and planning.

The most important part of the job of supervision is to be constantly on the alert for better and easier ways of doing the job. This means that the supervisor should not concentrate on *doing* the functional jobs of his department. He should free himself so as to have time to *study* his departmental jobs and find ways and means to reduce the cost of doing them. In other words, under modern ideas of management, a supervisor is a manager, not a worker. Of course, in a very small company, it might be necessary for a supervisor to be a working supervisor simply because the number of employees and the managerial duties would not require his full time and attention. Yet, even in a case of this sort, he is still charged with the responsibility for proper planning and efficient and economical operation.

In an organization of any size, a supervisor *must* delegate the work. This being the case, he must have the ability to obtain maximum performance from each of his people in order to assure highest production and efficiency in his group. To do this he must, in turn, know the proper standard of performance for each operation for which his group is responsible, both as to quantity and quality. He must be able to evaluate performance against those standards to determine whether or not each individual is meeting the requirements of his position.

Partnership with the Methods Man

Accordingly, the line supervisor of clerical functions and the methods man should and do work hand-in-hand in work simplification. The methods man leans very heavily upon the supervisor's knowledge of detail in his group, in making the initial survey of existing systems. In changing a system or in designing a new one, the methods man should also draw heavily upon the historical knowledge of the line supervisor, who will often use his past experience to evaluate a new proposal. In many instances the supervisor will save the methods man invaluable time in arriving at conclusions and in some instances may prevent him from making costly errors in judgment. The supervisor's long experience will also provide ideas for improvement and betterment of methods. With the proper cooperation between the methods man and the supervisor, the latter can and will contribute as much to a methods project as the former.

Since, as was stated before, the methods man has no line authority, the ad-

ministration of any work methods lies entirely with the line supervisor and their future effectiveness is dependent upon him. It will be seen, therefore, that the supervisor, even in the larger organizations where specially trained methods men are employed, carries as great a responsibility and contributes as much to work simplification as does the specialized staff man. It goes without saying that in smaller organizations where there is no staff organization, the responsibility for initiating work simplification rests wholly with the supervisor.

Methods Changes and the Individual Worker

Another important phase of the subject of methods improvement is the impact of work simplification on nonsupervisory personnel. There is an old and well-known saying that a chain is as strong as its weakest link. Likewise, a system is just as good as the people who operate it. The basis of any office operation is the quality of the employees, and certainly the success of procedures depends, in the final analysis, upon those who do the work. Certainly, in introducing changes in old systems or introducing an entirely new system, the cooperation of those who will ultimately perform the work is essential. It is a trait of human nature that persons set up habit patterns. In office work this manifests itself in the form of work habits. Arising from this is a natural resistance to change which, while primarily psychological, involves other factors when the change affects the assignment of a worker.

One of these factors is resentment of the criticism of the individual's work which a change in methods may be taken to imply. Some individuals tend to slip into inefficient practices on repetitive work, either involuntarily or through carelessness or indifference. As a matter of fact, this tendency is one of the prime reasons for the effectiveness and profitability of continuing methods surveys, even after an efficient method has been installed. Frequent checks are necessary to insure that the workers have not slipped back into more costly methods.

Another factor in resistance to change may be mental or physical laziness. An individual working on a familiar process tends to perform it automatically and, therefore, with relatively less exertion. The effort of learning new things or new methods is distasteful and creates a reluctance to accept change. Still another factor in resistance springs from the fear of change. The individual may be afraid that he cannot master a new technique, with attendant detrimental effects upon him. Then again, economic factors, such as lay-offs through reduction of jobs or loss of advantages of developed skills, may be the cause

of personal fear. In some cases resistance to change may come simply from an unwillingness to produce more for the same pay.

Therefore, introduction of new methods and systems requires a job of selling to the workers, as well as to supervisors and top management. Certainly, there must be full cooperation between top management, the front line supervisor, the rank and file worker, and those responsible for developing new methods. Each has his part to play in the proper coordination and operation of a business or department.

I know of no more effective method of securing the cooperation of the rank and file worker than to enlist his aid in planning revised procedures or methods. One of the first things any worthwhile methods man learns is the proper approach to, not only the supervisor, but also the workers, to gain their confidence so that he can solicit their cooperation and help. As is the case with the supervisor, the individual worker is in a position to, and frequently does, know better ways of performing his specific tasks.

The Question of Job Security

Another effective method of approach in selling work simplification to the worker is to stress the importance of increased productivity to job security. This may take two forms. One is to explain that the profit of the company depends upon productivity of the individual employee and a reasonable cost resulting therefrom, and that the continued existence of the company, which insures jobs for the employees, is dependent upon the profit. The other angle is the increased importance and value of the individual himself to the company through greater personal efficiency and productivity.

Probably the most important point is the allaying of the employee's fears of losing his job if methods are simplified and production is increased. This is relatively easy where there has simply been an increase in volume and the objective is more production by the same force. In instances where work simplification will result in elimination of jobs and reduction in force, it is possible, through proper handling, to accomplish this with very little reaction on individual employees.

The first and easiest method, of course, is to take advantage of turnover. When an employee leaves for any reason, a saving can be realized by simply not replacing him. It should be considered carefully whether replacement is necessary, whether the work may be distributed to other members of the group, or whether some change in method can be made which will eliminate the neces-

sity of replacement and result in force reduction, with attendant decrease in cost. It might be commented in passing that in large, and therefore more flexible organizations, this is one of the most productive methods of securing savings. It is amazing how much slack may be taken up in a clerical organization simply through shifting of duties, assimilation of additional load, and spreading of the work of one person among a number of others. The supervisor should have sufficient knowledge of the operations in his group and alternate methods of performing them, so that he can take advantage of every opportunity which presents itself for force reduction.

If force reduction cannot be accomplished through turnover, it is natural for the supervisor to attempt to select for retention the most competent and productive workers. In this connection, it is highly advisable to keep continuous records of performance, so that the supervisor is in possession of information at all times to determine the relative productivity of all employees rather than to be dependent upon his impressions, unsupported by recorded facts.

This is essential also in dealing with the employees, themselves, because the supervisor will be in a position to demonstrate factually to the employee just why he was not retained in preference to those who were. All other factors, such as ability to perform the work, knowledge, experience, productivity, physical condition, attendance, and attitude being equal, seniority should, of course, govern force reduction. All this adds up to one thing—that when such moves are required, management should be in a position to justify its decision so that, even if it cannot entirely overcome the injury felt by the affected employee, it can at least convince him that the decision was made on a fair and equitable basis.

A Dual Role

The importance of tight controls on clerical expenses cannot be emphasized too strongly. I have tried to outline, on a very broad and general basis, some of the means by which these controls might be applied through specific methods projects and procedural approaches. However, in my opinion, there is no substitute for constant and continuing vigilance against costly work methods. Accounting and clerical supervision has a dual responsibility—that of performing its work in the best possible manner and at the lowest possible cost. Certainly, one is no less important than the other. Constant attention to cost control and continuous and consistent pressure for cost reduction, however small, in every operation, is most necessary in completely fulfilling supervisory responsibilities.

Steel Blazed a Trail in Wage Administration

by A. A. SCHWEIGHAUSER
Manager of Industrial Relations, Laclede Steel Co., St. Louis, Mo.

Prefacing procedural description with a brief summary of the story of the introduction of job classification and evaluation into the steel industry, the author of this article outlines the steps by which this now recognized approach to equitable wage administration was tested for its applicability to the industry as a whole. The narrative then moves to the particulars of the experience of the author's company.

THE SUBJECT OF WAGE RATE INEQUITIES, job classification, and job evaluation has received considerable attention during the past decade, especially during wage stabilization in World War II and this attention will probably be intensified under the present wage controls inaugurated pursuant to the Defense Production Act of 1950. The World War II wage inequity, job classification and evaluation program in the steel industry was probably the largest undertaking of its kind, and some history and background is necessary to have a clear understanding of the problems which were encountered and still exist in the industry.

One of the principal objectives of the entire program in the steel industry was to make a fair and practical application of an agreement between the parties that "the employee is entitled to a fair day's pay in return for which the company is entitled to a fair day's work." This problem has been present between employer and employee ever since man has worked for wages, and the question has always been in the employee's mind "Are my wages fair compared to the wages of another employee?" and "Is the work I am required to do fair compared to the work required of another employee?" Equitable wage rates involve both fair play and fair work performance.

The First Union Contracts

The first labor agreement with the United Steelworkers of America was made with some of the larger steel companies in 1937 and it became clear that the treatment of wage rates presented a problem to which a solution had to be found at the earliest possible date. Most of these agreements had no fixed wage scales and stated that, where inequities in wage rates were alleged, the matter could be taken up for local plant adjustment and settlement on a mutually satisfactory basis. Many problems were created by such clauses and agreements,

as it was permissible for the union to challenge the fairness of any specific wage rate.

The union and management differed as to the proper approach to and settlement of any rates that were challenged under this clause, as there was no agreed-to yardstick to judge the inequity of a rate once it was challenged. Many of the rates in effect emerged from different backgrounds in various localities and, even though the union had the right to challenge any rate, there was no terminal point for the settlement of such differences, as the grievance procedure was not adequate. Every employee could find some instance, real or imaginary, for contending that his rate was out of line compared to another employee's job and rate. It was soon demonstrated that the problem could not be solved on a piece-meal basis.

Inception of the "Cooperative Wage Study"

From 1937 through 1941, some of the steel companies made efforts to install a job evaluation program, with no substantial progress. During 1943 several of the larger steel companies agreed that the problem was of sufficient importance to establish an agency to explore all aspects and, if possible, to develop a practical and constructive solution. Therefore, twelve major steel companies established a "cooperative wage study", set up an informal voluntary research organization and employed a qualified engineering staff to provide facilities to supply technical consulting advice. Most of the year 1944 was consumed in the development of procedures to describe jobs, classify jobs, and to determine the related wage rates for job classes, together with a complete procedures writeup or manual, which could be used to determine wage rate inequities in steel plant jobs.

The 1944 Steel Order of NWLB and Broadening of the Study

It must be remembered that over this lapse of time, the union was not consulted nor were any of these procedures negotiated or agreed. However, during 1944 some eighty-six companies were cited in the steel wage case before the National War Labor Board and, among the demands of the United Steelworkers, was one for determination of wage rate inequities on the basis of "equal pay for similar work throughout the industry." In the hearings before the panel and the board, the union urged the resolution of inequities on the basis of this slogan and most of the steel companies agreed before the board that some solution to the problem should be found. Furthermore, the com-

AAC 104 B

JOB DESCRIPTION LACLEDE STEEL COMPANY

Department	10" Mill	Standard Code	52100 BE 0140
Sub Division	Furnace	Standard Title	Heater
Plant	Alton Works	Plant Title	Heater - 10" Mill
Date	6/2/47	Plant Code	4-10

Primary Function

To control furnace temperature and eject billets for rolling in mill.

Tools & Equipment
Mill furnace, billet ejector, blowers, plows, wrenches, various valves, switches, gauges, etc.

Materials
Billets, slabs, gas, water, grease, etc.

Source of Supervision
Roller. Performs work with a minimum of direction.

Direction Exercised
Directs Billet Pullers in the charging of slabs and billets into furnace.

Working Procedure
Pushes lever to open door and, through use of two hand levers, operates billet ejector to push billet or slab out of furnace.
Withdraws ejector from furnace and closes door.
Directs No. 1 Billet Puller in operation of billet pusher.
Sends and receives buzzer signals for co-ordination of activities between front and back ends of furnace.
Cleans and levels furnace bottom at end of each turn, using plow attached to billet ejector to push scale to front end of furnace.
Secures heat numbers from billet yard and directs Billet Pullers in wiring off heats or orders.
Estimates temperature of furnace visually and operates valves and switches for adjusting gas, air, or draft to secure proper working temperature of billets and slabs.
Writes Heater's report of billets charged and used on each order.

The above statement reflects the general details considered necessary to describe the principal functions of the job identified, and shall not be construed as a detailed description of all of the work requirements that may be inherent in the job.

EXHIBIT 1

panies took the position that the union should be directed to bargain the issue to a settlement within the framework of guideposts to be established by the board.

On November 25, 1944, the National War Labor Board directed an orderly procedure for the classification, description, and grouping of jobs and for the establishment of wage rates for the job classes. The board limited the immediate cost for any one company to a maximum of 5¢ per employee hour.

Thus, the efforts of the twelve major steel companies which were participating in a cooperative wage study coincided fairly well with the directive issued by the board. They had already arrived at certain procedures for the determination of wage rate inequities, which were rather consistent with the directive order. Since eighty-six companies participated in the steel case, they

all received the same directive. Therefore, the original twelve companies which had organized the cooperative wage study invited the seventy-four other companies to participate.

Agreed-Upon Job Description and Classification Procedures

Negotiations with the union then followed and it became quite clear that the inequity program would require extending joint development by both parties —the union and each company. The union elected to negotiate first with the United States Steel Corporation (now the United States Steel Company) and a great many understandings were developed during these negotiations, among which was an agreed-to form for describing a job (Exhibit 1). The first avenue of approach was to use this agreed-to job description form on a number of key or benchmark jobs. Some 1,150 benchmark jobs were described and agreed to, based on this form.

The problem following job description was that of job classification, and this too was negotiated and agreed to by both the union and the company, to be accomplished by the use of certain procedures which were collectively called "A Manual for Job Classification of Production and Maintenance Jobs." When all benchwork or key jobs were described, classified, and agreed to and before final acceptance of the results by the company or the union, it was arranged that a test should be made in one of the steel plants. The test was carried far enough in one of the fully-integrated steel plants to demonstrate the soundness of the classification and job description procedure. Upon this satisfactory conclusion, the entire procedure, including forms and the manual, were released to all other steel companies participating in the program.

Exhibit 2 is the reverse side of Exhibit 1 and indicates the elements of job contents and shows the factors into which these elements are divided as follows:

1. Pre-employment training.
2. Employment training and experience.
3. Mental skill.
4. Manual skill.
5. Responsibility for materials.
6. Responsibility for tools and equipment.
7. Responsibility for operations.
8. Responsibility for safety of others.
9. Mental effort.
10. Physical effort.
11. Surroundings.
12. Hazards.

Each of these twelve factors is subdivided into levels of requirements specific for the jobs. It will be noted from Exhibit 2 that the placement of the job in its proper or appropriate level automatically assigns the correct numerical classification value and that the total of these values, when rounded out to the

JOB CLASSIFICATION LACLEDE STEEL COMPANY

Plant Title Heater - 10" Mill Standard Title Heater

Factor	Reason for Classification	Code	Classification
1. Pre-Employment Training	This job requires the mentality to learn to: Maintains proper heating temperature through control of valves and switches	C	1.0
2. Employment Training and Experience.	This job requires experience on this and related work of: 31 to 36 months of continuous progress to become proficient.	G	2.4
3. Mental Skill	Use considerable judgment to reason through and plan operating problems.	E	2.8
4. Manual Skill	Operates variable controls to eject billets and slabs from furnace. Gas and air valves.	B	.5
5. Responsibility for Material	Close attention for majority of turn to prevent over or under heating of steel. Maximum 1/2 hours production. 10 tons at $17.00 per ton = $170.00 — Estimated Cost: Less than $250.00	D	1.6
6. Responsibility for Tools and Equipment	High degree of care and attention required to prevent damage to furnace from over heating.	E HI	3.0
7. Responsibility for Operations	Has high responsibility for continuity of mill operation.	F	4.0
8. Responsibility for Safety of Others	Controls flow of inflammable gas. Few men exposed and safeguards minimize hazards.	C	.8
9. Mental Effort	Close mental and visual application to plan heating adjustments for proper rolling temperature. Operate billet pusher.	D	1.5
10. Physical Effort	Light physical exertion to operate controls of billet pusher. Occasionally straighten pile-ups.	B	.3
11. Surroundings	Extreme heat at intervals while checking temperature of furnace.	C	.8
12. Hazard	Moderate accident hazard. Exposed to severe cuts, bruises and moderate burns.	B	.4
	Job Class 19	Total	19.1
	Described By: C. L. B.	Date	
	Classified By: R. S. T.		
	Approved By: J. M. C.		

EXHIBIT 2

closest whole number, assigns the job directly to its proper job class. These methods and procedures have proven sufficiently simple to be reasonably well understood by both employer and employee and do not require the conversion to some other table in order to be used by either.

The Challenge of Specific Applications

Even though the entire procedure for job description and job classification, together with the manual, was agreed to at the international level of the union, many problems presented themselves when the entire program was started at local levels with local union people in the various companies. Since the program was developed for the steel industry as such, one of the problems was the selection and training of personnel to do the job of application at the local level. Most companies did have industrial engineering departments, but there was still the problem of proper training to do the job as agreed to between management and labor. The Wage Cooperative Bureau set up by the steel companies in connection with the original study and its extension, was very helpful in training people to do the job of applying the procedure and acted as a clearing house for specific problems.

However, the actual work load had to be carried on within the plant itself. Each job, as it was performed in the plant, had to be thoroughly studied and observed before writing a job description and, with the aid of immediate supervisors, this was the procedure followed. It was necessary to observe the same jobs on various shifts because men on different shifts did the same job in different ways. It was not the intention of the job evaluation program to change the contents of any job. In other words, the job was described exactly as it was being performed by the man or men. One of the serious problems in a situation of this kind was that foremen were prone to describe the job as it should be done and not as it was being done, and would lose sight of the fact that we were classifying the job and not the man.

An important comment appears on the bottom of Exhibit 1. It reads as follows:

> "The above statement reflects the general details considered necessary to describe the principal functions of the job identified, and shall not be construed as a detailed description of all of the work requirements that may be inherent in the job."

The comment is important because it was impossible to describe all the details of any one job. Therefore, if any element or function of the job was omitted, the employee could not refuse to continue to do whatever he had been doing originally, as this note provides for such a situation.

From "Bench Mark" Jobs to Plant-Wide Classification

The first major step after proper selection and training of personnel and education of supervision and management to the requirements of the program,

was the proper selection of guide-posts or benchmark jobs within a given plant, as had been done for the test application described earlier. These jobs required special attention because, after they were once described, evaluated, and agreed to, they were constantly referred to during the procedure of job description, job evaluation and classification throughout the entire company. The selection of benchmark jobs was given careful consideration and included roughly ten per cent of all the known jobs in any one plant. These jobs covered a range of skills from the lowest to the highest, with a few craft jobs also included.

After these jobs had been thoroughly checked and agreed upon by management, the next step was to negotiate the descriptions with the union committee. When complete agreement was reached by management and labor as to the job description, there followed classification and evaluation by management in accordance with the manual. Meetings were held with the union committee for the purpose of agreeing upon the classifications and evaluation of each job. For the reason already given, this entire procedure of classifying and evaluating benchmark jobs was as thorough and exact as possible.

The next move, after agreement had been reached as to the description and classification of all benchmark jobs, was to proceed to do the program for all jobs in the plant. Careful planning was necessary, as here again all job descriptions were first agreed to before classification started. The best method of handling the preparation of job descriptions was found to be to give the union committee a few at a time, and then to hold meetings to iron out any disagreements related to the particular group of jobs. The classification and evaluation procedures, which followed, also resembled the similar procedures for benchmark jobs. In these, also, provision was made for the disposition of any disagreements between management and labor by consultation. In our particular case, an arbitrator was agreed upon beforehand but, by careful planning, all apparent disagreements were resolved and his services were not required during the installation.

Job Classes and the Rate Structure

When job description, classification and evaluation were complete, it was possible to proceed to the critical task of applying the job classes to the wage scale. This was done by considering the base rate as Job Class 1, with a certain increment in cents per hour between job classes. The total number of job classes in a fully-integrated steel mill is about thirty, with a lesser number in smaller plants. In the steel industry as a whole, the pay increment between job

JOB CLASSIFICATION RATES AT 4 1/2¢ INCREMENTS
ABOVE $1.10 BASE RATE, AND ILLUSTRATION
OF EFFECT ON EXISTING RATES
RATE PER HOUR
Job Class 1
Job Class 21
4½¢ Increment Line
Job Number
Old Rate
Job Class After Program
Standard Rate
Amount of Increase
$1.71
5
1.29
.18
$1.47
7
1.38
None
$1.47
9
1.47
None
$1.76
19
1.92
.16

EXHIBIT 3

classes is uniform and, at the time of the installation of this program, it was 3½¢ per hour.

Exhibit 3 shows a base rate of $1.11 per hour for Job Class 1, with a 4½¢ increment line depicting resulting class rates up to Job Class 21. The exhibit also shows existing rates for four different jobs and how the job evaluation and classification program affected these jobs. All other jobs in the plant were, of course, affected in like manner. In other words, jobs which appear below the line would move up to the standard hourly rate and those above the line would move down to the standard hourly rate. However, with respect to jobs above the line, an agreement was reached with the union that any in-

STANDARD HOURLY WAGE SCALE

(Figures interpretative of Exhibit 3 up to highest class there shown)

JOB CLASS	STANDARD HOURLY WAGE RATE	JOB CLASS	STANDARD HOURLY WAGE RATE
1	1.11	14	1.69½
2	1.15½	15	1.74
3	1.20	16	1.78½
4	1.24½	17	1.83
5	1.29	18	1.87½
6	1.33½	19	1.92
7	1.38	20	1.96½
8	1.42½	21	2.01
9	1.47	22	2.05½
10	1.51½	23	2.10
11	1.56	24	2.14½
12	1.60½	25	2.19
13	1.65	26	2.23½

EXHIBIT 4

cumbent on the job would not receive a decrease in hourly rate. A new man coming into the job would receive the lower rate. The job rate readings from Exhibit 3 are tabulated in Exhibit 4.

Limitation in the cost of wage changes called for by the program, was arranged for. During a test period, if it was shown that the comparative cost per hour was more than the agreed upon amount allowed for adjusting inequities, the increment between job classes was lowered until the proper cost was reached. The test was accomplished by applying the job classification and evaluation program to a previous payroll period, *i.e.*, the new wage scale with a fixed amount between job classes was applied to a known payroll period. The difference in gross cost between new and adjusted payrolls was then divided by number of hours worked during the payroll period to determine the adjustment cost per hour. After the proper application to the standard hourly

wage scale was determined, the entire program was put into operation.

Throughout the steel industry as a whole, it is now the situation that the standard hourly wage scale and standard hourly rates in each company apply to all incentive and nonincentive jobs and no incentive worker can receive less than the rate of pay for a fair day's work. In other words, the application of this program in the steel industry had some tendency to eliminate incentive earnings as such. As a matter of record, it might be added that, although the original installation of the job evaluation program provided 3½¢ per hour between job classes in practically all of the industry, negotiations since that time have increased the increments to 5¢ between job classes. This was accomplished in steps of ½¢ at a time in subsequent negotiations. The final ½¢ was added in December 1950.

Clearer Sailing

It is recommended that, in the installation of any program of this type, the employer receive assurance of full acceptance by the union and employees. The installation is not an easy task and does take considerable time and effort. In our particular company some 525 jobs were described and classified, the entire program requiring about one and one-half years to complete. More than seventy-five scheduled meetings were held with the union committee during this period, not including informal discussions from time to time.

With us the installation has eliminated requests for individual rate adjustments by employees, as it is provided that a job classification can be changed only if the job content changes by more than one job class, either up or down. This gives a degree of flexibility in change of job content before it is necessary to increase the rate. Thus, the program has stabilized wage rates. The only grievances that are received relate to contention that job content has changed sufficiently to warrant restudy. Furthermore, the program also provides an orderly procedure for establishing rates on new jobs, as the procedure which has been described in this article is followed. Job descriptions and job classifications for all new jobs are prepared and then negotiated with the union committee.

Payroll accounting, record keeping and labor distribution have been greatly simplified through the elimination of many previously existing rates. We now have only 25 rates or labor grades for some 525 jobs, as compared to 200 rates before the installation.

COST BASES AND COST USES

ONE OF THE SOURCES OF CONFUSION which is encountered too frequently in industrial accounting practice is that which results from the failure of a cost department or a management group (or both) clearly to define objectives in compiling costs.

It is not uncommon to find, as an example of this confusion, instances in which current cost estimates for a company's products are used (1) for the immediate purpose of measuring the performance of various units of the manufacturing organization and (2) for the longer term purposes of (a) computing selling prices and budgeting sales effort and expense for each product, and (b) judging the relative profitability of various products. The results of the use of current cost estimates only, for the aforementioned purposes, are likely to be exceedingly confusing and disturbing.

Although a current cost estimate may represent a close approximation of "actual" cost, the latter term, at the extremes of its meaning, may denote:

1. Long-term experience historical cost.
2. Current or present cost.

Many factors may be required to "bridge the gap" between the two extremes, of which the following, frequently, are important:

1. The variation of costs with volume of production.
2. The effect of costs of temporary, nonrecurring events which disturb normal production or output.
3. The influence on production and costs of seasonal demand for a particular product or products.
4. The influence on costs of breakdowns in cost control procedures.

Therefore, the use to which any "actual" cost data is to be put should be clearly defined, because lack of definition indicates confusion of purpose and, therefore, will result in confusing and unfavorable results.

Let us avoid the confusion, then, which results from ambiguous cost information, by recognizing that long-term experience historical costs provide the tool for management appraisal of the relative profitability of products as well as a more accurate yardstick for the financial valuation of inventory, and that the temporary influences which cause a deviation therefrom, as reflected in current cost estimates, are those that lend themselves to table-pounding and remedial action.

NORMAN T. HARRISON, *Boston*

POINTS

DELIVERY DATES TO ORDER

MANUFACTURING special cutting tools with thousands of variations, we frequently receive urgent delivery requests from customers. Many times delivery ahead of scheduled delivery is requested by long distance phone. Under our previous system, immediate information was unobtainable.

With the job cost system in use and payroll of necessity taking preference over costs and production follow-up, posted job card information was always three days old. To answer requests, it was thus necessary to find the location of the order three days previously. Then the hunt was on! It surprised us many times to learn how fast a job lot can travel and how far it can move along the process of manufacturing in three days. Then, after having located the job lot, a rush ticket was attached and the customer was given the information.

The expense of a return telephone call or telegram and the time consumed in tracking down the job was eliminated by a simple, inexpensive addition to routine. Through the use of a perforated sheet

F VIEW

about 2" by 8", giving us eight 1" x 2" move tickets and a job location board, we easily "licked" the problem. These move tickets were prenumbered with the lot number and travelled with the job card. The department foreman, after completion of operations in his department, marked the move ticket with number of department to which the lot was to be delivered and placed the tools and move ticket in an "out" station.

Our material movement routine requires that our trucker make a regular two-hour circle of the plant, picking up at "out" stations and delivering to "in" stations. We asked the trucker to tear off move tickets after delivery to new location, accumlulate them, and after completion of his trip, deliver them to the production office.

The production office posts the new locations to the board and there we have it—the exact location of every job. The information is accurate within two hours! Now, when the phone rings, and while the customer is on the phone, a glance at the location board and a quick calculation of additional time necessary to complete the tools gives us that advanced delivery date for his information.

FRANK PANTALEO, *Rockford*

OVER THE ROAD

IT WAS WITH A GREAT DEAL of interest that I read the article, "Watch Dog Techniques for Truck Costs" by Walter Harrison in the December, 1950 issue of the N. A. C. A. *Bulletin*.

Expanding somewhat on what the author outlined in the way of record-keeping, we have found it profitable, not only to get accurate data on the various phases of truck operations but, because of a peculiar problem of our own, to go a step further and get a report for each truck or tractor trailer unit, which shows all direct and allocated costs chargeable to the individual units. These records are tied into the books, so that no items are overlooked.

Our operations consist of operating small fleets of from one to ten units in all parts of the country and involves the delivery of a product affected both by seasonal demands and fluctuating economic conditions. In order to utilize our equipment most effectively, we have found the individual unit record helpful in effectively controlling the size of the fleet at any one location. In other words, it enables us to determine quickly when to add to or remove a unit from the existing fleet.

This record, which we get on a monthly and a year-to-date basis, not only shows the various elements of cost incurred but also the number of trips made, the total mileage travelled, and the tonnage delivered. With this information it is not only possible to determine the cost per mile on such important costs as direct operating costs and maintenance, but it also enables us to determine the cost per ton-mile which along with the number of trips and average mileage travelled per trip, gives us a picture that enables local or divisional management to effectively utilize all equipment to the utmost.

From a cost standpoint, this phase of controlling truck costs per ton-mile is just as important as the proper control of direct costs and, where a truck operation is affected by fluctuations which are seasonal or economic in nature, the individual unit record for truck costs should prove profitable, because it helps reduce to a minimum the necessary capacity to do the job.

L. C. ALTMANSBERGER, *St. Louis*

Records for Accelerated Amortization Deductions

by JOHN-B. VAN HAELEN
Corporate Tax Accountant, Curtiss-Wright Corporation, Wood-Ridge, N. J.

How, quite simply, to record the acquisition costs of facilities for which certificate of necessity applications are to be filed and to transfer these costs to the application, itself, and compute the amortization deductions under alternative situations when the certificate has been granted, form the triple theme of this paper. The author stresses factors rendering clear records essential.

DURING WORLD WAR II many corporations filed for and received certification to amortize certain facilities either over a sixty month period or over a shorter period if the President deemed the emergency to have reached an ending. In the majority of cases certificates were granted for 100 per cent of the amount sought to be certified, with the result that record-keeping thereunder, although detailed, was not too unwieldy.

The Return of the Accelerated Amortization Privilege

On September 23, 1950 the President signed as Public Law 814, the Revenue Act of 1950. Section 216 of this Act again permitted taxpayers to file applications for certificates of necessity and again, upon receipt of certification, the taxpayer is permitted to amortize the cost over a sixty month period commencing either with the month following the month of acquisition or the year following the year of acquisition. The taxpayer must make the election for either one of the other basis at the time of filing the tax return. This time, however, there was no provision made for the so-called "short period amortization" when the emergency is declared to have ended.

As many now know, the certifying authority is not granting, in most cases, 100 per cent certification of the facilities sought to be certified. The percentages have varied from 100 per cent in a relatively few cases to 50 per cent, with an average of approximately 75%. (In the exhibits to this article, the writer has used the approximate average percentage of all industries.)

The first Necessity Certificate Regulations, issued by the Chairman of the National Security Resources Board and published in the Federal Register of October 28, 1950, prescribed under sub-paragraph 600.3(h) that it will be incumbent upon taxpayers electing to take the amortization deduction to establish to the satisfaction of the Commissioner of Internal Revenue the identities of the facilities, the cost thereof and the dates relative thereto. This paper is

Date Issued	Work Order No.
3/16/51	12459

WORK ORDER

☐ For plant, operating equipment, and additions
☐ For expense, including repairs and maintenance

Description and purpose:	Estimated by	Appm. No.
Purchase and Install 1 Drill Press for use in Experimental Machine Shop	G.H.R	751
	Appvd. Plant Engr. R.R.H.	Account No. 808
	Appvd. W.M.	Machine No. 16928
	Appvd. Acctg. E.P.R.	For Dept. 3211
	Appvd. Budget G.H.H.	Req. by Dept. No. 3211

Material	Quantity	Source	Estimate
Drill Press		1	$10,000.00
Electrical Material			275.00
Piping			100.00
COPY FOR		TOTAL MATERIAL COST	$10,375.00

Estimated Freight F.O.B. Shipping Point

Est. Weight	Rate Per Cwt.	Freight Cost
	$	$ 150.00

Labor	By Dept.	Est. Hrs.	Rate/Hr.	Estimate
Millwrights	7211	20	$2.50	$ 50.00
Electricians	7212	40	2.50	100.00

After original copy is approved, a working copy is sent to each trade concerned. Immediately upon completion of work, this copy with time recorded is to be returned to plant engineering department.

TOTAL LABOR COST $ 150.00

Work completed by trade	Date completed	Signed	GRAND TOTAL
5/15/51	5/27/51	G.R.H.	$10,675.00

NO CHANGE IN THE SCOPE OF WORK AS SHOWN ABOVE SHALL BE PERMITTED EXCEPT BY SUPPLEMENT TO THIS WORK ORDER.

EXHIBIT 1

written to attempt to set forth a uniform set of records for use by industry in future examinations by Agents of the Bureau of Internal Revenue.

Records To Be Maintained

The records to be maintained for the case history of the application for certificate of necessity and the subsequent certificate, as well as for the calculation of the amortization deduction claimed in the tax return, are supplemental records to those already maintained for fixed assets.

Exhibit 1 details a typical work order issued for the purchase and installation of a drill press with an estimated total cost of $10,675. This work order has become the basis, together with other work orders, for the amounts de-

WORK ORDER NO. 12459

SHEET NO. 1

WORK ORDER COST RECORD

DATE	REF.	DESCRIPTION	VOUCHER CHARGES	MATL.	LABOR	TOTAL
4/12/51	VR	1 Drill Press	10000 00			10000 00
4/25/51				422 15	50 00	472 15
5/10/51	VR	Freight	137 80			137 80
5/20/51				12 10	115 18	127 18
		CLOSED 5/27/51	10137 80	434 25	156 18	10737 13

EXHIBIT 2

tailed in Appendix A of the related application for certificate of necessity. Upon receipt of the certification, the certificate number should be placed on the face of the work order, in order that there will be a direct tie-in between the work order and the original application.

Exhibit 2, which is the work order cost record, details the various charges thereto and shows the total work order cost, a percentage of which is to be amortized. It should be very clearly stated on this "report cost record" the exact date of closing, as this is necessary for the computation of the amortization deduction. The total of the work order is then posted to total work order cost as shown in Exhibit 3 and the percentage certified thereto is posted under the month and year applicable.

The starting point for preparation of the schedule exemplified by Exhibit 3 is the appendix—referred to above—to the application for the certificates of

necessity. The listing should be in exactly the same order as in the application. The amount in the "applied for" column should correspond with the amount in the application. The amount "granted" column represents the percentage of the amount applied for which was granted and the amount "deleted" represents the difference. The total work order cost comes from Exhibit 2.

The columns with month headings show the amount to be amortized from the month of closing. The transfers column, which follows, represents the amount transferred to regular facilities and reflects the difference between percentage granted of total work order cost and 100 per cent. Cancellations represent those work orders which it was subsequently decided not to acquire, possibly due to the unwillingness of the certifying authority to grant any percentage of amortization. The last two columns represent the amount by which expenditures for facilities were either over or under the amount estimated in the original application and must be segregated between "granted" and "deleted" elements as shown. The amount in the second of these two columns is very important, as it will show the taxpayer whether or not it is necessary to make a further application increasing the amount originally applied for.

This record is not only a complete case history of the original application and the facility acquisition costs related thereto but also is a proof of the figures to be used in the amortization deduction computation. For example, if one takes the total work order cost of $750,267.13 as shown in Exhibit 3 and deducts therefrom the total of $187,566.78 transferred to other accounts as well as the amount which is over or under the amount granted (which in this case is $14,731.60) the difference of $547,968.75 will prove to the column headed "Estimated or Actual Costs Granted." It is obvious, therefore, that this record may be proved in any number of ways to the original amounts applied for.

The advisability of maintaining this record cannot be stressed too strongly, as it will in all cases provide in one brief ledger all of the necessary information to tie back any acquisition to original cost, as well as to tie into the record for the amortization claimed in the tax return in any year.

"Following Month" Amortization : 1. Certificate Precedes Return

In the majority of cases, even though the taxpayer elects to amortize starting with the month after acquisition, the certificate of necessity will have been granted prior to the filing of the tax return. The top portion of Exhibit 4 details the calculation necessary to prove the tax deduction claim in this case. Each line number on this record corresponds to a line number in Exhibit 3.

The calculation on this basis is simple, as the amount to be amortized is

Summary of Cost Basis for Amortization of Facilities Completed Under Work Orders, Showing Amounts to Be Amortized Distributed to Months in Which Acquisition Was Recorded

(Application Dated March 28, 1951—TA—NC—14xx)

Line No.	Work Order No.	Description	% Cert.	Actual or Estimated Total Cost: Applied for	Granted	Deleted	Work Order Cost	Cost to Be Amortized Year 1951*: Month	Amount	Transfers: Amount	Cancellations	(Over) or Under: Deleted	Granted
1		Account Number											
2	12031	Experimental building	75	50,000.00	375,000.00	125,000.00	520,000.00	Mar.	390,000.00	130,000.00		(5,000.00)	(15,000.00)
3													
4		Account Number											
5	12447	(1) Bryant hole grinder	75	30,000.00	22,500.00	7,500.00	29,200.00	July	21,900.00	7,300.00		200.00	600.00
6	12451	(2) Vinco spline grinder	75	40,000.00	30,000.00	10,000.00	39,000.00	Sept.	29,250.00	9,750.00		250.00	750.00
7	12459	(1) Drill press	75	10,675.00	8,006.25	2,668.75	10,737.13	May	8,052.85	2,684.28		(15.53)	(46.60)
8	12564	(4) Gleason grinders	75	120,000.00	90,000.00	30,000.00	122,650.00	April June	45,937.50 46,050.00	30,662.50		(662.50)	(1,987.50)
9	12661	(1) Cinn. grinding mach.	75	20,450.00	15,337.50	5,112.50	19,280.00	Feb.	14,460.00	4,820.00		292.50	877.50
10													
11		Account Number											
12	12742	Parts racks	75	2,500.00	1,875.00	625.00	2,400.00			600.00		25.00	75.00
13	12743	Grease racks	75	5,000.00	3,750.00	1,250.00	5,000.00			1,250.00			
14	12759	Parts racks	75	2,000.00	1,500.00	500.00	2,000.00			500.00			
15													
16		Account Number											
17	12880	100 Desks	-o-	5,000.00	-o-	5,000.00					5,000.00		
18	12881	100 Chairs	-o-	2,500.00	-o-	2,500.00					2,500.00		
		Totals		738,125.00	547,968.75	190,156.25	750,267.13			187,566.78	7,500.00	(4,910.53)	(14,731.60)

*The complete form includes a column for each month and shows monthly totals. A single column is used here for brevity.

EXHIBIT 3

divided by sixty (as per Internal Revenue Code Section 124A) to determine the monthly amortization deduction. In the first year, the resulting amount is multiplied by the number of the months remaining in the year after the date of acquisition. For the next four years the monthly amortization would be multiplied by twelve for each year. The final year's deduction would be the monthly amortization multiplied by the remaining number of months required to fulfill the sixty month period. It should be pointed out that it is found to be desirable to complete the calculation for all years as soon as the work order has been closed and posted to the record represented by Exhibit 3 and the amount to be amortized has been posted as in Exhibit 4 in order to prove the deductions.

"Following Month" Amortization : 2. Certificate Succeeds Return

In some cases the taxpayer may find that the certificate has not been granted by the time the tax return is due to be filed. The election may still be made to amortize on the basis of the month following the month of acquisition. For the year in which the certificate has not been granted at the time of filing the return, the taxpayer will take normal depreciation, with the adjusted base (amortizable cost less depreciation claimed in first year), claimed over the remaining months.

The middle portion of Exhibit 4 varies from the top portion to reflect this situation. It shows the date of the certificate as August 28, 1952, a date which would normally be subsequent to the filing of the tax return for the calendar year 1951. For the sake of simplicity, it has been assumed that the taxpayer takes normal depreciation on the basis of TD 4422, which permits six months depreciation in the year of acquisition, regardless of the month of acquisition. It has also been assumed, although so far there have been no applicable rulings, that this will be acceptable to the Treasury Department for items to be subsequently subject to accelerated amortization. Based upon the foregoing, the middle section of Exhibit 4 details the calculations to be made.

For example, Work Order 12661, Line 9, shows the date of acquisition to be February 10, 1951 and the amortizable cost to be $14,460. Assuming a 10 per cent normal rate of depreciation, the normal depreciation for the year 1951, under TD 4422, would be $723 ($14,460 x 5%). The adjusted basis starting with January 1, 1952 would be $13,737 ($14,460 less 1951 depreciation of $723) and the amount to be amortized would be the same figure. As the taxpayer has elected to amortize on the basis of the month following month of acquisition, the adjusted basis would be amortized over a 50 month period (60 months less 10 months the facility was in use during 1951) or $13,737 ÷ 50 x 12 for the first 4 years after 1951 and $13,737 ÷ 50 x 2 for the last year.

Calculation of Amortization Deduction When Amortization Is Started the Month Following Acquisition and Certificate of Necessity Has Been Received

(Application Dated March 28, 1951—TA—NC—14xx)

Line No.	Date Closed	Work Order Number	Amount To Be Amortized	Amortization Deduction 1951	1952	1953	1954	1955	1956	1957	1958
1		Account No.									
2	3/15/51	W. O. 12031	390,000.00	58,500.00	78,000.00	78,000.00	78,000.00	78,000.00	19,500.00		
3											
4		Account No.									
9	2/10/51	W. O. 12661	14,460.00	2,410.00	2,892.00	2,892.00	2,892.00	2,892.00	482.00		
10											
11		Account No.									
12	7/ 6/52	W. O. 12742	1,800.00		150.00	360.00	360.00	360.00	360.00	210.00	
13	2/ 9/53	W. O. 12743	3,750.00			625.00	750.00	750.00	750.00	750.00	125.00
14	10/ 1/52	W. O. 12759	1,500.00		50.00	300.00	300.00	300.00	300.00	250.00	
15											
16		Account No.									
17		W. O. 12880	Cancelled								
18		W. O. 12881	Cancelled								
	Totals		$62,700.35	75,866.95	111,330.05	112,415.05	112,540.05	112,540.05	36,673.20	1,210.00	125.00

Calculation of Amortization Deduction When Amortization Is Started the Month Following Acquisition, but Certificate of Necessity Has Not Been Received

(Application Dated August 28, 1952—TA—NC—14xx)

Line No.	Date Closed	Number of Months for Amortization	Work Order Number	Amortizable Depreciation Cost	Credit	Basis	Amortization Deduction 1952	1953	1954	1955	1956	1957	1958
1			Account No.										
2	3/15/51	51	W. O. 12031	390,000.00	3,900.00	386,100.00	90,847.08	90,847.08	90,847.08	90,847.08	22,711.68		
3													
4			Account No.										
9	2/10/51	50	W. O. 12661	14,460.00	723.00	13,737.00	3,296.88	3,296.88	3,296.88	3,296.88	549.48		
10													
11			Account No.										
12	7/ 6/52		W. O. 12742	1,800.00		1,800.00	150.00	360.00	360.00	360.00	360.00	210.00	
13	2/ 9/53		W. O. 12743	3,750.00		3,750.00		625.00	750.00	750.00	750.00	750.00	125.00
14	10/ 1/52		W. O. 12759	1,500.00		1,500.00	50.00	300.00	300.00	300.00	300.00	250.00	
15													
16			Account No.										
17			W. O. 12880	Cancelled									
18			W. O. 12881	Cancelled									
	Total			562,700.35	12,183.49	550,516.86	125,884.72	126,969.72	127,094.72	127,094.72	42,137.98	1,210.00	125.00

Calculation of Amortization Deduction When Amortization Is Started the Year Following Acquisition of the Facility

(Application Dated March 28, 1951—TA—NC—14xx)

Line No.	Date Closed	Work Order Number	Amortizable Depreciation Adjusted Cost	First Year	Basis	Amortization Deduction 1952	1953	1954	1955	1956	1957	1958
1		Account No.										
2	3/15/51	W. O. 12031	390,000.00	3,900.00	386,100.00	77,220.00	77,220.00	77,220.00	77,220.00	77,220.00		
3												
4		Account No.										
9	2/10/51	W. O. 12661	14,460.00	723.00	13,737.00	2,747.40	2,747.40	2,747.40	2,747.40	2,747.40		
10												
11		Account No.										
12	7/ 6/52	W. O. 12742	1,800.00	90.00	1,710.00		342.00	342.00	342.00	342.00	342.00	
13	2/ 9/53	W. O. 12743	3,750.00	187.50	3,562.50			712.50	712.50	712.50	712.50	712.50
14	10/ 1/52	W. O. 12759	1,500.00	75.00	1,425.00		285.00	285.00	285.00	285.00	285.00	
15												
16		Account No.										
17		W. O. 12880	Cancelled									
18		W. O. 12881	Cancelled									
	Total		562,700.35	12,535.99	550,184.36	108,693.38	109,320.38	110,032.87	110,032.87	110,032.86	1,339.50	712.50

EXHIBIT 4

In making the calculation under this method the taxpayer should exercise care that the cost of the facilities and the applicable reserve amounts computed under TD 4422 for the year 1951 (to use the illustrated instance) are transferred from the balances in the regular fixed asset and related reserve accounts at the beginning of the succeeding year, in order to eliminate the possibility of claiming a depreciation credit in addition to a deduction for amortization.

It should be noted that as work orders 12742, 12743 and 12759, lines 12, 13 and 14, represent items which were acquired during the year the certificate was granted, or subsequent thereto, normal depreciation is not taken during the year of acquisition but, rather, amortization is commenced immediately.

Amortization Deduction on "Following Year" Basis

The bottom portion of Exhibit 4 exemplifies the amount to be claimed as an amortization deduction when the taxpayer elects not to start until the year following that of acquisition of the facilities. The calculation for depreciation is the same as outlined in the middle section. However, the adjusted basis is amortized over a full sixty months. Under this method the amortization credit for all years will be equal, with the possible exception of odd pennies. It should be pointed out that, in the year 1956 the taxpayer would have an allowable deduction of $110,032.86 under this method as against an allowable deduction of $36,673.20 as shown in the top section of Exhibit 4, which might be of benefit if tax rates continue to rise. In addition, as this method produces a more uniform deduction, it may have advantages for financial forecasts.

The Questions Will Be Asked Later

This manuscript is not written with the intent of influencing any taxpayer as to the election to be made for the calculation of the amortization credit but rather to point out the methods which may be used and to stress to the readers the importance of keeping accurate records for applications and certificates.

Moreover, it has not been possible to point out the many ramifications to be encountered for cost purposes in claiming the amortization deduction. At the time this was written, the entire subject of accelerated amortization was in a state of flux in Washington and the pros and cons relative thereto were manifold. What it is essential to bear in mind for practical purposes is that few of these deductions will be examined in the near future. Hence, we must prepare for a somewhat remote time. The inevitable turnover in personnel is significant here. Our records must be adequate to answer any questions and to supply full details for our claims in much later years.

CPFF Materials Cost Reimbursements at Less Cost

by RAYFORD W. HARWELL

Accounting Supervisor, Consolidated Vultee Aircraft Corporation, Fort Worth, Texas

It is proposed in this article that the task of contractor and government alike, with respect to accumulation, audit and reimbursement of direct material charges under cost plus fixed-fee contracts be rendered less heavy by aligning procedures with those followed in respect of payroll costs and also of overhead. Transfer of emphasis in cost inspection from detailed vouchering to appraisal of internal control is recognized as a desirable current development which has gained some headway and places a responsibility on companies for better internal control and expanded internal auditing.

THERE IS NO FIELD OF ENDEAVOR which has not felt, in some serious way, the impact of the national defense program. The accounting problems that arise during such periods must be dealt with quickly and simultaneously by many businesses and by many accountants. Also, at such times, accounting publications—along with other avenues of communication and consultation—may perform an especially useful function. These problems can be examined, various points of view and various approaches discussed in detail, areas of agreement recognized on the controlling facts, and criteria developed upon the basis of which a selected treatment may be chosen in specific instances of application and divergent practices reduced to a minimum. Particularly is this necessary with the problems of accounting for defense or war contracts and the problems of doing business with the Government.

Cost-Plus-A-Fixed-Fee Contracts in World War II

The cost-plus-a-fixed-fee contract is a good example. After an absence of more than twenty years, the "cost-plus" contract suddenly reappeared at the beginning of World War II. It was not quite the same as the old "cost-plus" contracts of World War I, the limitation of profit to a fixed amount giving it a new character. The change made necessary a new examination of the accounting problems involved.

Billions of dollars of CPFF contracts were entered into by various procurement services during World War II, as this type of contract was more suitable to certain kinds of new products and to certain contractors, particularly for ini-

tial contracts. The needs for it still exist but in a decreasing degree, since knowledge of manufacturing cost and development of manufacturing methods are making it possible, under the expanding defense program, for an increasing number of contractors to determine fixed sales prices.

Yet, even if the number of CPFF contracts under the present defense program is on the decline, there will be many of these contracts in existence for a long time and the accounting problems incident thereto will continue to be important to many companies and to many accountants.

The major problem of contractors with cost-plus-a-fixed-fee contracts is the prompt submission and collection of all the cost from the Government. Any delays in the submission of the cost place undue demand on the contractor for funds to finance the contracts. In addition, any cost incurred and expended under such contracts and not ultimately collected must come from the fixed-fee portion of the contract, thereby resulting in a reduction of the net fee earned under the contract. Since the percentage of profit under fixed-fee contracts is generally less than under fixed price contracts, it is readily seen that any unallowable or uncollected cost under cost-plus-a-fixed-fee contracts becomes of vital concern to management and to the accountants responsible.

Emergence of the Selective Audit

At the beginning of World War II, the Government followed an audit procedure under CPFF contracts requiring a detailed check of every item of cost. In many cases reimbursement of large sums were held up because of an error of a few cents or a few dollars, correction of which entailed far more expense than was involved in the error. Such detailed audit had been a part of Government procedure for a long time and seemed to be particularly imbedded at that time in the requirements of the General Accounting Office. However, the volume of CPFF contracts issued at the outset of World War II and the impossibility of finding and developing enough trained accountants to make audits on such a detailed basis, finally supplied the arguments with which to get approval of a change to test, or rather selective, audit procedures. This sounds like a reasonably simple development but it was equivalent to a major upheaval.

The application of these new procedures and the extent of use of the new philosophy of audit first appeared in the manual for "Administrative Audit of Cost-Plus-a-Fixed-Fee Supply Contracts" which was prepared by accountants of wide professional experience under the auspices of the War Department. This manual was released by the War Department for the guidance of its own staff. However, it was also available to contractors and to public accountants. The

amount of detail suggested by the manual was influenced by the fact that the audit was intended to be used as a basis for payment of specific invoices.

One set of requirements for audit of material and other costs under CPFF contracts was not changed by the manual and has not been changed at this date. The documentary requirements for supporting the submission of direct material and supplies purchased for use under CPFF contracts remained unaltered. (The detailed documentation called for is not required in the submission of direct labor cost and overhead charges.) Under the present procedure for submitting vouchers for materials and supplies to the Government for audit under CPFF contracts, contractors are required to support schedules of payment to vendors for material and other charges in the public vouchers with:

1. The original of the vendor's invoice or original documents.
2. Copy of receiving report which has passed through the inspection department and stores and has then been approved for accountability by the accountable property officer.
3. The rejection notice covering disposition of any rejection disposition report (RDR) issued by the inspection department and referenced on the Government copy of the receiving report.
4. Any debit memorandums issued by the contractor covering rejected, damaged, or shortage of material shown on vendor's invoice.
5. The Government audit copy of the approved purchase order with its attendant change orders and quotations, and the posting on the reverse side of the purchase order of each applicable transaction.

Recent Developments Toward Simplifying Government Audits

It is apparent that, under the procedure, a contractor involved in the procurement of a large amount of material and supplies under a CPFF contract is confronted with a major problem in the prompt submission and collection of such cost. However, in a large-scale procurement program, such as that now being entered upon, reconsideration of government audit functions and procedures appropriately occurs. The requirements for documentary evidence supporting public vouchers under CPFF contracts has recently received due consideration by government officials responsible for the audit of these contracts, in order to expedite the cycle of reimbursement of material cost and to correct the inconsistency in the requirements of documentation for all elements of cost. The General Accounting Office, as well as the Department of Defense, has interested itself in the elimination of extra costs under CPFF contracts, unnecessary checking and the duplication of effort on the part of government and contractor's personnel. In short, a question has arisen in the minds of many familiar with contract audit policy relative to the wisdom of devoting to the audit program the manpower necessary to cope with this documentation.

This problem is merely one phase of the greater problem concerning purchasing and pricing methods, contractor incentives, defense financing, and prevention of excessive defense costs. As Brigadier General T. R. Rampy, Auditor General, United States Air Force, stated in the January, 1951 issue of the *N. A. C. A. Bulletin:*

> "There are still some unadjusted differences in the methods and procedures of the three audit staffs but we are trying to eliminate them where they are in any way confusing to industry. Constructive criticism of our methods and procedures is always welcome. It is generally realized that it is as impracticable for the services to perform detail audits as it is for the public accountant. We must make maximum use of selective tests and consider the degree of internal control present in each situation. A positive and continuing effort is being made to reduce the number of auditors in plants by cooperating with contractors in the development of more efficient accounting systems. In this direction we very much favor an internal audit staff. When one exists and if it can be shown that the system has the necessary type of checks and balances, that there is sufficient testing of the system by the contractor's staff, that accuracy and equitable results are achieved for its operation, the Service's audit staff will be reduced to the minimum necessary to test the continuation of the established situation."

Likewise the "comprehensive audit" approach recently devised by the General Accounting Office for improving accounting in the Federal Government is being carried on in close relationship to its broader systems work and recognizes that the accounting and internal control procedures of each agency are the basic points for effective control of the Government's financial operations.

Such an audit program, as applied to contractors, changes the audit emphasis to a continuous review and appraisal of the contractor's basic accounting procedures and internal controls under which the individual charges are developed. In other words, the emphasis is on the utilization of the greater portion of the audit effort in the examination of the contractor's general records and the internal accounting procedures and practices *before* the transactions occur, instead of making detailed mechanical checks for the purpose of audit verification *after* the transactions occur. The ultimate goal of this program is simplifying the preparation and documentation of CPFF public vouchers covering direct material and other direct charges and of eliminating the necessity for preparing and handling duplicate sets of documents—one for the Government and one for the contractor.

Plan to Reduce Documentation of Material Cost Vouchers

It is the purpose of this article to show how direct material and other direct charges recorded through normal accounts payable processing and general fund check payments could be submitted for Government audit without supporting documents other than the following records, which would be submitted to sup-

port all public vouchers for the period but would not be included in the voucher for each contract:

1. A register of general fund checks issued by the contractor for the period.
2. A voucher distribution summary of all net charges resulting from the total volume of invoices, expense reports, and other charges paid to creditors of the contractor for the period, which agrees in total amount with the total of general fund checks mentioned above.

Public vouchers for direct material and other direct charges to CPFF contracts which are summarized in the above-mentioned schedules, could then be prepared for submission under the respective contracts. The submission of such vouchers would cover all of the direct charges to the CPFF contracts resulting from the distribution of charges from the payments made by contractor's general fund checks listed in the check register covering items accrued in the contractor's records through the normal accounts payable procedures.

The proposed preparation of the public voucher for direct charges to a CPFF contract, based upon the accounting distribution of accounts payable items paid within the period, is identical with the methods and procedures now used in the submission of direct payroll costs, based upon the distribution of the salaries or wages paid within the payroll period. (It may further be noted that overhead charges resulting from accounts payable processing are not required to be documented by original invoices, receiving reports, purchase orders and other data.) As to payroll, with the wide use by contractors of punched card methods, it has been recognized that the clock cards, earnings distribution cards, payroll master rate cards, employee deduction authorizations, etc., necessarily involve all active contracts. Hence they are not specified for submission as documentary evidence of payment but are maintained in file by the contractor. The evidence of payment is furnished by the contractor's payroll check register and the labor distribution summary, which agree in total amount. The supporting detail record files are available for review and verification of the accuracy of the payment, propriety of the distribution, and adequacy of the methods and procedures used by the contractor to maintain the necessary operating controls to assure the correctness of the final summaries upon which reimbursement is claimed.

Similar treatment of the many documents involved in the recording and distribution of accounts payable items would result in contractors simply maintaining open to inspection the files of original invoices, receiving reports, debit memoranda, credit memoranda, rejection notices originating in either the receiving and inspection of materials or from the laboratory or shop determination of deficiencies or nonconformance to the current specification requirements, packing sheets for return of materials for re-work or replacement, and any other

items to be taken into account by contractors to insure proper settlement with other parties for materials or services, etc. These records would be accessible for audit and review by the government auditors exactly the same as records involved in the processing of payrolls. The evidence of payment would be furnished by the contractor's general fund check register and the supporting accounts payable distribution voucher register summary, which agree in total amount. The supporting detail records maintained by the contractor would, to repeat what has been stated above with respect to payrolls, be reviewed for *verification of the accuracy of the payment, propriety of the distribution, and adequacy of the methods and procedures used by the contractor to maintain the necessary operating controls to assure the correctness of the final summaries upon which reimbursement is claimed.*

Under the procedure for submitting public vouchers, as described above, it is understood that proper credits to the CPFF contracts for inspection rejections, shortages, etc., would be issued upon the determination of such credits in the normal course of business. Such credits would be applied on the next invoice payments due the vendor, and the Government would receive credit in the reimbursement claim for such payment.

The accounts payable vouchers assembled for each submission could be held intact for one week and then placed in regular files. These files would be maintained by contractor's personnel and the vouchers would be under the technical custody of the Government. All government copies of purchase orders and receiving reports, with any supporting bids and quotations, should be maintained in files by the contractor by purchase order number and, at the expiration of the statutory time to maintain the records under the contracts, the supporting document files should be prepared for disposition to the United States General Accounting Office.

Contractors should segregate from the standard vouchers any items of a questionable nature. When there is a doubt, such items should be submitted in a separate voucher for special consideration.

Consolidating the Government Audit Task

Under the proposal here made, the stage will be set for comprehensive nonrepetitive auditing. The methods and procedures used by contractors in processing accounts due others for items of direct contract charges, indirect costs or overhead charges by the respective classifications of overhead which are segregated for allocation purposes, should be audited along with such other items of the contractor's business as payroll fund transfers, United States Savings Bond purchases by employees, liquidation of corporation liabilities, advance pay-

ments of invoices for the purpose of securing purchase discounts for the benefit of the Government, and other matters. These should be audited and reviewed by the government auditors assigned to the CPFF contracts involved. The regional government personnel who work in cooperation with local government auditors and the contractor's internal audit personnel should consistently verify the adequacy of the payment and billing methods and procedures used by the contractor.

Increased Importance of Audit Programs and Internal Auditing

Hence it is imperative that a definite and complete audit program be developed and that it should be of adequate scope to protect the interest of the Government in the light of the contractor's existing methods and systems of internal control. Here again the benefits to be expected go beyond the area of direct charges and relate to the matter of overhead also. A good audit program can assist with the current reimbursement of overhead charges, the many complications which can arise in the distribution of such charges, and the adherence to consistent and approved policies. The following are some of the requirements for a selective audit, as suggested in the manual for "Administrative Audit Procedures for Cost-Plus-a-Fixed-Fee Supply Contracts," which could be used under such an audit program.

1. **Portion examined is to be representative of the total group from which it is selected. The selection must be made without regard to convenience or availability of data or difficulties involved.**
2. **The portion or phase selected must be checked out completely and without exception.**
3. **If the portion audited indicates numerous errors, the scope of the examination must be extended to a detail check of the particular phase of the accounts.**

On the other hand, in carrying out a program of selective auditing, it is important to avoid a fixed and continuing pattern of procedure and routines and to revise the scope and the extent of the program currently. Therefore, the emphasis should be placed upon the overall determination that the detail accumulation of cost is fully subjected, as an internal process, to the necessary procedures, cross checks, audit tests and controls. This will give assurance of the maintenance of accurate and consistent basic handling for all cost accumulations and payments upon which the contractor bases charges to CPFF contracts, and claims reimbursement. To achieve this desired state of affairs, contractors' accounting operations should be under continuous surveillance of internal auditors and government auditors to make certain of the continuance of sound accounting procedures and practices.

This means that any company working on defense contracts cannot afford to overlook the importance of internal auditing in connection with CPFF contracts. There can be little doubt that a properly functioning auditing department will greatly facilitate and expedite the collection of cost under CPFF contracts, as well as the company's work in connection with renegotiation and any termination of its defense contracts. For this reason alone, a company in defense work will find it profitable to inaugurate an internal auditing department. The elimination of the supporting documentation now required to be attached to individual public vouchers should be accompanied not only by better internal auditing but also by expansion of controls and records to provide adequate control and information for audit and examination.

How Simplified Materials Cost Documentation Will Effect Savings

Under the proposed program, a substantial saving will be accomplished when the reduced requirements for paper work are firmly established, since it will lighten the load of contractors, contractors' vendors, and the Government. The benefits to be derived may be summarized as follows:

1. Elimination of—
   a. Duplicate work of handling two sets of invoices through accounts payable.
   b. Detail work now required in matching and submitting both paid invoices and detail supporting documents.
   c. The requirement of extra copies of invoices from the contractor's vendors.
   d. Posting of detail submissions on the government copies of the purchase order.
   e. Storage space required by the Government for this large volume of duplicated documents now prepared and submitted as supporting evidence of cost, since the records would be available in the contractor's files as long as required under the governing regulations.
2. Improvement of the reimbursement cycle, allowing contractors to expand production without undue demand for additional funds to finance it.
3. Reduction of the need for added manpower for the government audit under the growing defense program.
4. Improvement of the records, internal controls, and accounting standards of CPFF contractors.

It is worthy of repetition that the simplified procedure proposed here and the documentary evidence to be utilized under it in submitting public vouchers is consistent with and similar to the long-established policy for documentation of payroll cost and overhead cost. Without any weakening of internal controls (rather strengthening), it should provide full evidence of payment and fully auditable public vouchers. With this possibility in mind, for the simplification of government audit requirements, companies with CPFF contracts should re-examine their present accounting systems. They should weed out any features which they deem too costly and burdensome in relation to the accounting results.

Controlling Costs in the Publishing Industry

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Describing peculiarities of publishing as an industry and—after viewing the relationship of the parts in several possible ways—identifying periodicals as (in the large) packaged readership sold to advertisers, with net circulation revenue or expense a contributory factor, the author of this article deals with the broad profitability problems involved. He also discusses more direct cost control problems. Five classifications of publishing costs are recognized and elaborated upon.

WE EASILY FALL INTO THE HABIT of thinking that cost accounting exists only in the familiar design of factory accounting, aimed at finding product unit costs through such techniques as standard costs, quantity and price variances, etc. Yet there are many forms of economic activity which are in need of cost accounting but cannot use factory accounting techniques because they do not function the way a factory does. Publishing is a good example.

Publishers have costs as imperative as those of any manufacturer and just as hard to control. They are quite as much in need of good accounting to find out the true facts about their costs but, since the economics of publishing differs in fundamental ways from manufacturing or from any other kind of business, publishing cost work has to be carried out in a different way.

Peculiarities of Publishing

A series of books would be needed to cover fully the various accounting methods employed in all types of publishing. What I will try to do in this short article is to give enough of the publishing picture to illustrate how, in this specialized situation, a characteristic approach to cost accounting is necessary, and to show, that, however much the method varies, it is always directed to the same ultimate purpose as cost accounting in other lines—guiding management in the most efficient utilization of human time and resources.

Any study of costs in a publishing company must begin with a clear understanding of the economics of the business. Publishing falls into three basically different types: (1) newspapers, (2) magazines and (3) books. Within each of these main branches there are various subtypes, all having their own peculiar operating and cost problems. The three basic types, however, differ from each other in fundamental ways and differ even more from other lines of business.

Newspapers and magazines both start from the same unorthodox cost situa-

tion. The cost to manufacture does not have any direct relation to the selling price. For the publisher, manufacturing cost is an indirect cost in the profit calculation. You can even think of it usefully as a kind of fixed cost. Normally it cannot be recovered by sale of the physical product. Now, that alone upsets the apple cart completely for a normal cost accounting approach. But there is more along this line. The publisher has two completely different kinds of customers and two separate sales departments totally different in character. To the first set of customers he sells his product for little more than it costs to make the sale. Then he recovers all other costs and makes his profit by selling a by-product.

Behind these oddities is the basic fact that what the publisher sells is really not a manufactured article. It is entertainment, information, ideas—but packaged, it might be said, in a manufactured form. I remember the peculiar situation which existed in the candy industry in 1931 when the box cost twice as much as the candy. The same anomaly, in greater degree, can be pictured as a permanent feature of publishing.

Publishing Cost Components

A skeletal picture of the cost structure of a magazine or newspaper shows five main parts:

1. Editorial costs.
2. Mechanical costs.
3. Selling subscriptions and copies.
4. Selling space.
5. Overhead.

Editorial cost is the starting point. There the publication is created. Yet in dollar terms editorial costs make up only a small piece of total expenditures. And, generally, the larger a publication the smaller *proportionately* is its editorial cost. A national magazine may spend, say, $20,000 on editorial work for a single issue. If circulation is a million, the cost of creating the magazine is two cents a copy, which may be six to seven per cent of the total budget. A magazine of several million circulation can allow the editor $50,000 or more per issue and still stay under five per cent of total expenditures.

By contrast, cost of manufacturing makes up half or more of the total outlay of any magazine or paper in the larger circulations. Here are included (1) the cost of paper which alone takes a fourth or more of the publications' income and (2) the printer's work of setting up type, making plates, printing and assembling copies, all of which costs roughly as much as the paper. Also included in the same cost group is postage and other means of physical distribution. The whole is commonly referred to as mechanical cost. This mechanical cost on large

publications outweighs all other costs and expenses combined. One might think, therefore, of this as the area for the cost specialist to watch most closely. That would be right. Yet, in undertaking the job, in a forthright way, the selling price offers no boundaries, as in the usual instance, for here cost of manufacture far exceeds the selling price. How can one figure out how much unit cost the publication can afford? There is a rather complex calculation for this which will be taken up shortly.

The third class of costs—editorial costs and mechanical costs having been briefly discussed—is circulation selling cost. Actually, this item is not spoken of as "selling". It is called promotional cost or circulation maintenance. The corresponding unit cost factor is the acquisition cost per subscription, a very important figure in magazine accounting. Normally it costs to make the sale well over half of what the subscriber pays, sometimes pretty nearly the whole selling price. Since it was noted above that the cost to manufacture is nearly always greater than the price of the publication, the publisher seems to be running a business where the cost to make and sell his product is two or three times as much as he sells it for.

Of course the answer is that a "by-product"—advertising—is the main revenue producer. By-product is not really the right word. A more significant way of putting it is that, in the economic skeleton of this business, all three of the cost incurring divisions which have been identified—editorial, mechanical, and circulation—together turn out the ultimate salable product. That product is readership, an audience in a receptive mood for the message of advertisers. To recapitulate, the publisher's fundamental production process is in reality a complex one. He must first create a magazine or newspaper, reproduce it in quantity, and build up and hold an audience. Only then does he have a product which can be marketed profitably.

The fourth and fifth cost groups need little discussion. They work on familiar patterns. Overhead has the same cost standing in publishing as anywhere else and space selling costs are much like those incurred in selling industrial products. The salesmen work on commission or salary with expenses, are directed by a sales manager, and the publication has to advertise itself to potential advertisers. A simple test for the cost efficiency of the selling function is to convert the cost to a percentage of the dollar volume sold. Ordinarily the ratio should not exceed sixteen per cent or seventeen per cent on big publications and somewhere between twenty per cent and twenty-five per cent on smaller ones. However, a simple relationship of that sort is not adequate to guide cost control work in the three primary areas of editorial, manufacturing, and circulation costs.

Industry Cost Comparisons Are Available

The picture is, in fact, highly complicated. Immediately below, the usefulness of recourse to industry statistics is mentioned and somewhat further on attention is given to some of the internal problems which make it hard to keep publishing costs down. However, before that, the significant subject of the break-even point in advertising volume and the question of the advisability of curing loss situations through expanded circulation or improved content are discussed at some length, as these are characteristic of the industry.

One important tool is comparative industry figures which are compiled regularly for several of the publisher's associations. These show the prevailing spread among successful publications of the unit costs for different publishing elements and the ratios of each cost to revenue. Comparative industry costs are basic for assessing the efficiency of an operation. What is being done successfully in other companies should be attainable for a particular publisher, so far as the character of the operation corresponds. This proviso is, of course, the catch. There are many varieties of publications and, in each one, the structure of costs works out more or less differently. To apply comparative figures in any particular case, it is necessary to analyze the cost structure of the publication with all its idiosyncrasies.

Determining the Break-Even Point on Advertising Volume

The break-even calculation has specific complications for a magazine or newspaper. It involves several different kinds of variables interacting on each other. The most important, besides advertising rates, are:

1. Pages (or inches or "lines") of advertising.
2. "Editorial" pages (all unpaid space).
3. Copies circulated.
4. Per cent yield on circulation mailings.
5. Renewal percentage.

Change in any of these alters the break-even point. Consequently, no break-even point can be defined except by taking one variable at a time and assuming that the others are fixed.

Advertising volume is usually the place to start. If all circulation, editorial and rate factors remain unchanged, how many pages of advertising per issue will result in breaking even? To solve the problem thus posed requires separating costs into fixed and variable with respect to changes in the advertising volume. The variable costs for this purpose are the cost of selling each page of advertising and the costs of paper, printing and postage or delivery for each

BREAK-EVEN CALCULATION FOR A MAGAZINE

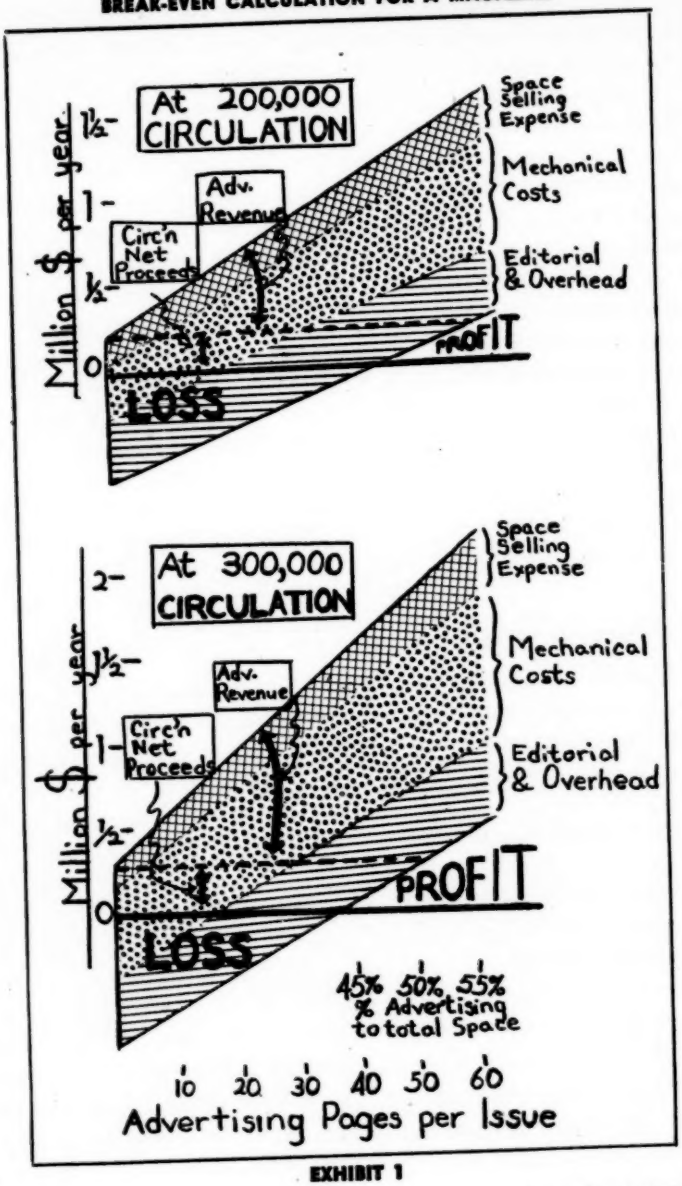

EXHIBIT 1

additional advertising page added to a basic book. Everything else is fixed cost in this calculation.

Here is a sample computation of the advertising page break-even point for a magazine:

Advertising revenue per page		$ 3,210
Deduct: Sales commissions at 6%	$192	
Total mechanical cost of each advertising page (number of copies remaining fixed)	789	981
Net revenue per page of advertising		$2,229
Fixed costs—		
Total editorial cost per issue		$ 30,000
Mechanical cost of all editorial pages		52,000
Fixed selling expenses		20,000
Overhead per issue		25,000
Circulation cost per issue		60,000
Circulation receipts per issue		(85,000)
		$102,000

$102,000 divided by $2,229 gives the break-even point at about 46 pages of advertising per issue.

The diagram in Exhibit 1 illustrates the requirements of multiple break-even calculations. In the upper chart, assuming a fixed circulation of 200,000, we calculate the effect of variation in the number of advertising pages sold. In the lower chart we recalculate, assuming the circulation is raised to 300,000 with resulting increases in advertising rate, mechanical costs, and relative cost of obtaining the extra circulation.

In both charts we assume a fixed editorial budget and fixed editorial space averaging 50 pages per issue. If changes in either of these are involved, new diagrams will be needed to give effect to the variations in editorial and related mechanical costs.

A figure which is more useful in publishing cost work than the breakeven point, is the economic minimum or the volume required to produce a minimum safe profit. A reasonable minimum objective today is fifteen per cent, before taxes, of the advertising revenue. The calculation for this follows the same form as above, except that the fifteen per cent margin is first deducted from revenue. In this example, the economic minimum comes out at 58 paid pages per issue.

Budget Balancing by Expansion of Circulation

What if the economic minimum is advertising linage is not obtainable? In analyzing papers and magazines which are limping along unprofitably, we find

in many cases that the economic minimum of advertising space, worked out according to the calculation given above, is quite out of reach. Total revenue potential at current rates in the locality or field served, is just not great enough.

In those cases, the next move is to analyze the possibility of raising the rate. Advertising rates depend basically (with a certain amount of leeway according to quality and standing of the publication) on circulation. A new breakeven calculation, a more complicated one, is called for. Variables in this analysis are:

1. Acquisition cost per new subscriber.
2. Renewal rate.
3. Mechanical cost of additional copies.

Notice there are *three* variables. Therefore a one-step break-even calculation following the familiar form is not possible. (Actually there are more than three variables but complicating factors, *e.g.*, lower rates for longer term subscriptions, differential costs of different solicitation methods, etc., are left out of the present explanation to avoid confusing the main picture.)

The first and biggest question is the cost of acquiring new circulation. This is a problem which is always with the publisher and has to be constantly watched in the regular operation of maintaining the circulation. Hence there is data at hand from which to start the calculation.

From among the various methods of getting circulation, let us take as an example a single one, direct mail solicitation. Three main factors enter the equation:

1. *Subscription price.* This is fixed (unless we decide to change it). In this example we take it as $3 a year.
2. *Cost per piece mailed.* This is known from the company's actual current costs. Generally it is around 5¢ a piece, though big mailers may get it out for a bit less.
3. *Return per cent* (number of orders received per hundred pieces mailed). This is the big unknown.

Return rates vary endlessly with type and quality of the publication, mailing lists used, how much the same prospects have previously been worked, and the "pulling power" of each letter used. On top of all these individual variations, over-all direct mail results are, like the weather, subject to unpredictable and often unaccountable changes. When those phases come on and the change is a decline, the bottom drops out for everybody and mail results fall off to a half or even a quarter of normal. That makes the cost prohibitive and publishers generally drop direct mail solicitation for a while until the "weather" improves.

An over-all average return of one and one-half per cent to two per cent is pretty good in general magazine work. One per cent is a satisfactory figure to use for a conservative forecast in a normal magazine campaign. Using one per cent return and five cent cost per piece mailed, we come out with a cost of $5 per *order received* (not quite the same as *acquisition cost per subscriber*, because

a percentage of those who order never pay. This minor correction is ignored here).

It must be remembered that the subscription is priced at $3. However, it will cost $5 merely to sell it. At this point in any other line of business, the whole project could be dropped in the wastebasket but the publisher is not discouraged by this showing. There is another inning in his game, renewals. Bringing in a renewal costs relatively little. Thirty-five cents is a fair average. That leaves $2.65 net to the publisher. Estimating what percentage will renew, based on the publication's current experience, we might expect, say, forty per cent. So, besides the $3 subscription price collected when the new customer first subscribes, there will be a net take a year later of forty per cent of $2.65 and sixteen per cent the year after that.

This all adds up to about $4.50 income per new subscriber, to set against the $5 cost of acquisition. Hence, a proper forecast is that it will cost 50¢ per new subscriber to build the circulation to a higher level. That will be the result *if* we get an average return of one per cent on mailings and the renewal rate of the new subscribers is in fact forty per cent. Naturally, every means to better both those percentages are tried. If, for example, an average return of one and one-half per cent from mailings is obtained, there will be, instead of cost, a net revenue of $1.15 from each new subscriber obtained. And so on for other combinations which can easily be computed.

The above is an indication of the kind of calculations to be made on the cost of building a larger circulation. The hypothetical factors on which the figures so completely depend, are subject to check, in a measure. Every good circulation man tests in advance the results to be expected from each campaign. It is done by pilot mailings to representative samples of the prospect lists, from which the result of the full campaign can be predicted with considerable assurance.

To go back to the primary problem of whether or not an unprofitable situation can be cured by going to a higher advertising rate, the cost of servicing a larger circulation must be considered in addition to the feasibility of acquiring at a moderate cost the circulation base for a higher rate. This is a straight computation from the cost records. The cost of the paper in each copy, the postage per copy, the printer's price for running additional thousands over the present base, and the cost of clerically handling each subscriber's record are all known. It is thus possible to determine exactly how much the cost will be per thousand new subscribers.

As the next step, the level to which the advertising rate could be raised, based on the larger circulation, is decided upon. The rate determination does

not depend solely on size of the circulation but also on market and competition studies (including consideration of possible loss of volume if the rate is raised). It would take us too far afield to try to describe these factors here. Finally, the net benefit realizable from the higher rate is compared with the total cost of creating the basis for it. It can then be judged whether or not a higher rate is the solution to the difficulties.

Is a Better Product Required?

In practice, all kinds of variations and involutions come into these calculations according to the particular features of the actual situation. Sometimes, it is necessary to go deeper. For example, suppose tests prove that sufficient circulation at reasonable cost to support a profitable advertising rate is not available because the paper now does not have sufficient appeal to a large enough audience. The publication must be changed and improved in order to attract the additional subscribers which will permit charging more for advertising. That element goes into a projection which, in outline, is somewhat as phrased in the next paragraph.

Work out the editorial budget required to publish the kind of paper which will attract the needed readers. That budget may be one which would have to be carried at a heavy loss for one or two years before it bears fruit in the form of better circulation. Add the heavier mechanical cost which will be incurred in publishing and mailing copies to the additional subscribers and extend it for the two or three years before it will be effective in winning more advertising revenue. The total of all this indicates how much money must be risked in shooting for a profitable operation.

Facing the Particulars of Cost Control

In the foregoing paragraphs a good deal of space has been devoted to figuring out income and cost relationships to arrive at a profitable basis for a publishing operation. After that is done, it is still necessary to maintain effective surveillance over actual expenditures. It is possible to lose on the best of propositions if money is inefficiently spent. In publishing, it is not practicable to make much use of that excellent technique, standard costs. Every issue of a publication is something new and the cost of producing it does not fit in well with any system of standard costs. In fact, in publishing there is not even any consistent use for the product unit cost at actual. Exhibits 2 and 3 show two simple compact forms for reporting the vital cost factors which determine a publication's profit or loss results.

CIRCULATION STATISTICS

Month _____ 19__

Publication _____

MONTHLY FIGURES			YEAR TO DATE		
This Month	Same Month Last Year		This Year	Budget	Increase or Decrease
%	%	RENEWAL %	%	%	%
		NUMBER OF ORDERS			
		New			
		Renewal			
		Total			
		Mail			
		Field			
		Other			
		Total			
		PER NEW ORDER			
$	$	Gross income	$	$	$
—		Direct cost			
$	$	Net income	$	$	$
		PER RENEWAL ORDER			
$	$	Gross income	$	$	$
		Direct cost			
$	$	Net income	$	$	$

EXHIBIT 2

The great bulk of publishing cost is found in two types of expenditures: (1) paper and printing and (2) salaries of professional and office staff. Two much smaller areas are: (3) postage; and (4) illustrations, including the making of engravings by which the pictures are brought into the printing plates. Those four types of cost make up well over 90 per cent of total expenditures of any periodical or newspaper. Nearly all of the remainder is in fixed overhead expenses, such as rent, telephone, taxes, etc., and in traveling and entertainment.

In the case of newspapers we do indeed find many of the aspects of factory costs in the areas of printing and paper. Newspapers almost always have their own printing plants. Magazines, on the other hand, rarely do their own printing. It is usually contracted to outside printers. Several of the large magazine publishers own big printing plants, but, even where there is a printing division, it functions as a separate business. These printing divisions, besides producing the company's own magazines, nearly always print a great many others for

PUBLISHING STATISTICS

Publication _____ Month _____ 19__

MONTHLY FIGURES			YEAR TO DATE		
This Month	Same Month Last Year		This Year	Budget	Last Year
		COST PERCENTS TO ADVERTISING INCOME			
%	%	Mechanical	%	%	%
		Advertising			
		Editorial			
		Overhead			
%	%	Total before circulation	%	%	%
		NUMBER OF ISSUES			
		NUMBER OF PAGES			
		Display			
		Classified			
		Filler			
		Editorial			
		Total pages			
%	%	% Paid pages to total	%	%	%
		COPIES — Pressrun			
		Paid Circulation			
		UNIT COSTS			
		Mechanical			
$	$	Average cost per page	$	$	$
		Costs per M copy pages			
$	$	Printing	$	$	$
		Paper			
		Postage			
$	$	Total	$	$	$
		Editorial Cost Per Editorial Page			
$	$	Salaries	$	$	$
		All other			
$	$	Total	$	$	$
		Advertising Cost Per Advertising Page			
$	$	Salesmen's costs	$	$	$
		Office costs			
		Promotion			
$	$	All other	$	$	$
		Total			
		ADVERTISING REVENUE			
$	$	Per page	$	$	$
		Per page per thousand			

EXHIBIT 3

other publishers. The parent company is simply one among the printing division's customers.

Because of this situation, the magazine publisher finds that his problem of controlling printing costs breaks down into three phases:

1. Negotiating a good printing contract.
2. Checking the printing bill carefully to be sure that charges conform to the usually rather intricate provisions of the printing contract.
3. Seeing that editorial people handle their work in such a way as to avoid unnecessary printing costs.

The Editorial Influence on Printing Costs

Usually the best way to deal with the problem of editorial influence on printing cost, so far as it relates to premium cost items resulting from editorial schedules, is in connection with the regular analysis of printing bills in the accounting department. As part of this job, it is practicable to identify and list for each issue all the "extras" which got into the bill due to failures of editorial timing. These costs must be reviewed regularly by a cost man who has a thorough understanding of the problems of both editorial work and printing.

Another way in which editorial work influences printing costs is in the makeup and editorial specifications. There are myriad variations in the way matter can be laid out on pages, with resulting differences in printing cost. These variant methods fall into two classes. The first of these relates to the many cases in which alternative methods are available to get the same final result. Good magazine production people know all these tricks and are skillful in ways of reducing cost. Yet it is surprising how often, especially on medium-sized publications, production employees fall into a rut and persistently do certain things by the more expensive methods. The cost investigator who is thoroughly acquainted with magazine production can find rich veins of possible saving in cases where the production people are not on their toes at all times.

The other class of editorial planning practices which raise printing costs covers devices consciously adopted to get effects which the editor or art director believe to be desirable in spite of higher cost. Such decisions are ordinarily beyond the criticism of a cost man. Yet some outside check on an editorial department is very necessary.

The most acute cases of this malady can be detected by a cost investigator through comparing unit page costs with those of other publications of similar standing and quality. If the comparison gets too far out of line, the cost man then has ammunition to offer for a top-level attack on editorial practices.

Printing Price Scale and Paper Costs

What is usually a more important factor in a magazine's printing cost than editorial practices, is the price scale charged by the printer. Setting the scale is a matter for negotiation. There is no market price level as a guide, because

of the infinite variety in requirements. To get the best results in dealing with printers requires not only a thorough knowledge of printing but also of printing plants, their present situation, equipment, available facilities, etc. Smaller publishers are apt to be at a disadvantage in seeking the best printing arrangements, unless represented by a printing expert.

The situation on paper is far simpler. Paper cost is settled almost entirely by a single policy decision on the weight and quality of paper to be used and by good purchasing. Quantities used are no problem. They can be calculated with great precision. The only variable element is the amount of waste in printing. Reasonable waste under any set of conditions can be rather closely defined, so it is an easy matter to check the printer's performance on that score.

Controlling Salary Costs

After paying for printing, paper and postage, most of the publisher's remaining money goes into salaries. Writers, artists, salesmen, executives and office people make up practically the entire payroll on magazines (and on newspapers, too, outside of the printing plant). Good control of these payroll costs is basic for the profitable operation of any publication, but individual time records are not kept and are unlikely ever to be kept by publication staffs. In most cases they would tell nothing valuable even if maintained.

A sound approach to controlling publisher's payroll costs runs along the following lines:

1. Be sure the accounting classification of salaries is correct. It should first follow departmental lines of responsibility and then be further classified within each department by type of work.
2. Relate salary expenditures for each type of work in each department to the volume and quality of work handled. Compare with prevailing standards on other comparable publications.
3. Maintain salary scales consistent and in reasonable accord with generally prevailing levels.
4. Periodically review procedures and methods to see that time is efficiently applied throughout the organization and that all the people are really needed.
5. Tie incentive compensation plans for responsible executives to the results which they are in a position to control.

Four Goals

Through such accounting and control methods as have been described, it is possible to work out serviceable analyses of costs in publishing enterprises. They fulfill the basic responsibilities of cost accounting by furnishing:

1. An index of general efficiency.
2. A guide to the desirability of one form of operation as compared with another.
3. Ways of improving administration.
4. A means of reducing costs.

Those are the essential services which good accounting must render in any line of human endeavor.

THE WORKSHOP

What Should the Industrial Accountant Study?

by DR. THOMAS A. BUDD

Chairman of the Accounting Department, Wharton School, University of Pennsylvania, Philadelphia, Pa.

TO A PERSON WHO HAS HAD NO CONNECTION with a university or a college, it would seem that the problem of planning a curriculum for those who are going into a particular field would be a very simple problem that could be worked out simply by jotting down a list of those things a student should learn and incorporating it into the curriculum. In point of fact, the matter is much more complex than that.

First of all, upon what level is the instruction to be given? Shall a student be required to take a couple of years of liberal arts education, after which he is to be indoctrinated into the field of accounting or shall he be required to pursue both accounting and liberal arts education right from the beginning of his college course. Furthermore, what general education shall be given the man who is going into accounting and what specialized education shall he pursue? All of these things are matters that cannot be decided overnight. They are matters which concern not only the educators but also those who are to be educated.

The Importance of General Studies

In the background of all our educational processes is the liberal arts education, the general education. In later years there has been a breakdown of that education into various specialties, one of which includes the field of business and, in the field of business, a part which includes the field of accounting. There are those who believe that there must be a certain amount of education in the physical sciences, without regard to anything else which the student may take. There are those who feel that the only real education is in the field of the humanities and do not admit that there should be education in specialized fields. It is a very important fact, too, that there are, in all of our colleges and universities, well-entrenched interests in particular courses and particular subjects.

Thus it is that there are doubtful areas when it comes to considering any new field of education. Nevertheless, I would like to offer in general outline education toward industrial accounting. The first thing it is necessary to understand is that no man is qualified to go into the field of accounting whose training is entirely in technical subjects. If he is to really gain the top in his profession, he must

have a background and a fundamental basis in subjects which are considered general. It is in the question of when the general education shall come and in what manner it shall be given, that problems arise.

However these problems may be settled, the curriculum of the specialist should contain a core of general educational subjects which will cover a certain amount of English, history, science, mathematics, and languages. If he is going to be successful in life and reach the top of his profession, he has got to have that fundamental basis. A great many people will differ from me with respect to languages. I have noticed over the years, to my dismay, that we have students coming to us with little language training and that in modern languages. I know that, in my own experience, latin has been of inestimable value to me and I give it to you as a fundamental in all education. I believe firmly in the study of languages.

What Technical Subjects Should Industrial Accountants Study?

To pass on to other points, suppose that a student has chosen this fundamental background history, English, latin, mathematics and science and suppose he comes to college and is to take a course which will fit him for industrial accounting. What other subjects should he have? I want to qualify my suggestions in advance by saying that if you list all of the things which I am going to include, you will find that the student will not be able to get them in his education in college, because there are too many and some will have to come after he gets his degree.

The student who is going into industrial accounting should have both elementary general accounting and cost accounting. (He ought to have more of the latter than the colleges are offering at the present time because they are only skimming the surface.) I think he ought to have some knowledge of industrial accounting systems. He ought to know what kind of systems are used in a department store, what kind of a system is applicable to a municipality, and what kind of systems are of use to other types of industrial enterprises. It is necessary to have that background in order to see what the differences are and to know how the fundamental accounts are changed in order to give the essential information in these various industries.

I also believe that a man going into industrial accounting ought to have some knowledge of internal auditing, sharply distinguished from external auditing. This would include survey of ways of investigating the operation of cost systems on such matters as whether or not the materials, labor and overhead accounting is satisfactory. There should also be some work in financial analysis. On that I feel quite strongly because for twenty years I have been giving a course in financial

analysis and it is, to say the least, rather disconcerting to me when I look at some of the modern books on accounting which deal with the analysis of financial statements in one chapter at the end of the book when I find that it takes me a whole year (and I could use another half year) to give the student even the basic factors concerning the financial analysis of a business.

Every student who is going into industrial accounting ought to have, beyond purely cultural study of English, something which might be called report writing. As a matter of fact, I think it should be required of almost everybody who is going into business. It is a field in which our colleges are slack. We talk about English composition but we do not impart to the student the ability to set down facts which are before him in a way to permit their being understood by the average man in the shortest possible time.

There are also sundry subjects of real contributory importance. I think that anyone who is going into the field of industrial accounting ought to know a little about mechanical drawing and blue-print reading so that, if he is in a position in which he is given some plans relating to a plant or a process, he will be able to read them well enough to correlate them with cost facts. It is, of course, possible that such supplementary subjects should be graduate studies, for they are quite numerous. Among them would be included commercial law. I think an industrial accountant ought to know something about the fundamentals of contracts and agency and like topics. The supplementary list would also include such diverse items as corporation finance and sales management. These are just examples. Many more subjects could be added.

All This and Education Too

How are we going to get these courses into a man's formal education? Time is limited to either two years of business training on top of two years of liberal arts study or to four years in a school in which the business education goes along with the liberal arts work. What, then, is the solution to the rounding out of the technical portion of the education? It lies in continued study. In my opinion, any accountant who cuts down in the years of formal education the amount of general training will find that it will be fatal in the years to come. I am very much worried about that. You must have technical accounting, of course, but the man who is going to be successful in his field has to have more than that. He has to have the fundamental training in the liberal arts and general education which go to make up the man with an all-around education.

But suppose it is agreed that there must be a certain fundamental basis

of general education and, on top of that, a certain amount of technical accounting education. The man in the street will still feel that this is very easy to accomplish. You simply set aside a certain number of credits for general education, a certain number of credits for accounting education, and let it go at that. The trouble is, not only do the educators disagree on a situation of this kind, but the accountants likewise disagree as to what to keep and what to drop.

We have great differences of opinion as far as the college faculties are concerned, great differences of opinion as far as the students themselves are concerned, great differences of opinion as far as the accountants are concerned. Hence the particulars of an accountant's college curriculum now represents principally an area for the resolution of such differences. The need is for active interest by all groups concerned, in getting upon common ground and in constructing a generally accepted basis for the education of industrial accountants.

Do Our Schools Turn Out Industrial Accountants?

by GEORGE J. KALCIK
C.P.A., Green Bay, Wisc.

THAT PARTICULAR BUMP OF CURIOSITY which prompts one to slyly touch a glistening surface provocatively labeled "wet paint" can perhaps be blamed for the thesis of this manuscript. This curiosity was nurtured over a period of three years of teaching by such questions as:

1. "Where can I find a man who is interested in making industrial accounting a career?"
2. "I surely hated to let the chap go but, in spite of his good college record and the early promise that he showed in our department, he just could not seem to fit himself in with the rest of the personnel. Do you know of someone looking for a good, steady job in our cost accounting department?"
3. "I am getting tired of teaching simple industrial accounting techniques to our new personnel. It seems that all they know are financial accounting applications! Why don't they begin to teach industrial accounting too?"

As each new and parallel question was put to me, I could not help but develop the idea that something was wrong with either the accounting training methods on the one hand or the character building programs on the other (or perhaps both), as presently followed by our schools of accounting. During my last year of teaching, I gradually came to realize that I was becoming more and more sensitive to the generalization which would revolve about the above type of question and was becoming further an unconscious searcher for a possible solution to the problem. It persisted with me, coming to mind with such frequency and intensity that I deviated from "accepted principles of teaching" in the hope of finding some clue as to where the answer lay. One particular device

used was a self-evaluation questionnaire for the student as to his accounting skill development. The results obtained were interesting from the teaching view-point and to an even greater degree in demonstrating that the overall problem was far from being a simple one.

Trial Survey

After discussion with several educators and a few accounting department executives, I became convinced that the scope of a program to determine deficiencies in modern accounting education would be broad indeed. The mere thought of the labor involved in working out the casual considerations entering into a program—such as the preparation of fair methods of evaluation, proper weighting of factors so developed, speed in tabulation of results as given by completed questionnaires, etc.—tarnished the attractiveness of entering into such a bit of research. Still the importance of the matter could not be shunted to one side because of the seeming magnitude of such factors. The question of feasibility was passed around among the good friends who have been referred to. It was suggested that perhaps a test-run of such a study might at least settle the point of practicability. For this reason, the study was placed on a limited basis.

What really took place and is described in this article was a "dry run" to prove or disprove the feasibility of developing the basic idea into a full-fledged research program under the guidance of competent experts. First of all a tabulation was made of the most frequently offered accounting courses of several colleges and universities in a representative area. The questionnaire is shown as Exhibit 1. It was sent out to fifty members of N.A.C.A.'s Northern Wisconsin Chapter who had not been exposed to the project in any of its preliminary stages.

The contents and format of Exhibit 1 evolved out of several questionnaires which were subjected to the criticism of other members of the chapter. The original idea of giving a detailed description of the scope and/or content of each of the courses listed in the exhibit was unanimously vetoed on the basis that the average accounting executive did not need such indoctrination in order to be able to formulate an opinion. Both the second and third sections of the questionnaire were additions recommended by my advisors, usually with a comment to the effect that "a list of accounting subjects alone is too limited in scope and not particularly conclusive when taken in light of an over-all generalization as to adequacy of training of industrial accountants."

The figures shown in Exhibit 1 are the percentages tabulated from the returns. The original form was set up with the purpose of providing a quick

QUESTIONNAIRE

CATEGORY ONE: "INDUSTRIAL IMPORTANCE OF ACCOUNTING CURRICULUM SUBJECTS"

Evaluate the accounting courses listed below as to their relative importance as background training for anyone desiring to enter the field of industrial accounting. Those of primary importance, place a check mark in Column 1; those of secondary importance, place a check mark in Column 2; those not considered of importance, or superfluous, place a check mark in Column 3.

	1	2	3
1. Elements of Accounting	100	0	0
2. Money and Banking*	10	59	31
3. Investments	7	55	31
4. Corporation Finance	45	59	0
5. Social Security Law*	21	52	24
6. Business Law* (1 semester)	28	38	14
7. Business Law* (1 year)	34	45	17
8. General Economics	52	45	0
9. Analysis of Financial Control and Budgeting*	76	28	0
10. Marketing Methods	10	62	31
11. Economic Theory	24	41	28
12. Statistical Methods*	48	45	3
13. Advanced Accounting*	90	7	0
14. Business Communication	34	52	17
15. Elements of Cost Accounting*	97	3	0
16. Advanced Cost Accounting*	83	10	0
17. Auditing*	55	52	0
18. Accounting Systems*	83	7	7
19. Governmental Accounting*	10	31	52
20. Production Planning and Control*	45	48	7
21. Federal and State Income Taxes	59	48	10
22. Industrial Managament*	31	48	10
23. Public Utility and Institutional Accounting	0	31	72
24. Advanced Accounting Problems	45	41	10
25. _____			

*Subjects so marked are usually listed as one semester in term.

CATEGORY TWO: "PERSONAL CHARACTERISTICS"

From the list below, please indicate the six attributes or qualifications which would be given primary position when considering the hiring of trained accounting personnel by either your general accounting or cost accounting departments:

93 A. Moral Character	14 G. Ability to Operate Accounting Machines
66 B. Personal Habits	
100 C. Initiative	24 H. College Degree
59 D. Business Courtesy and Knowledge of Business Ethics	24 I. Mathematics Beyond High School Level
69 E. Prior Experience	21 J. Good Penmanship
52 F. Loyalty to Employer	59 K. Ability to Express Thoughts
	17 L. Letters of Recommendation

GENERAL

Do you think that the accounting curricula of today could be improved in scope when viewed from the standpoint of training the individual for industrial employment as an accountant? Yes 86% No 7%

Should schools strive for great stress on the importance of those attributes listed in Category Two? Yes 86% No 7%

As to employee failure to measure up to personnel standards in positions being considered, which of the two categories above contributed the greater number of such failures? Category One 31% Category Two 66%

EXHIBIT 1

and easy means of selection indication by check marks. The statistical tabulation of each section will be considered individually. The comments which will be made about each are those of the writer and should be construed as merely an attempt to arrange the results in a more logical manner so that a reader of this paper can arrive at an interpretation of the percentages with a minimum of effort.

Interpreting the Responses in Category One

The statistical tabulation of Category One produced the following accounting subject classification as to primary importance in light of industrial accounting requirements:

1.	Elements of Accounting	100%
2.	Elements of Cost Accounting	97%
3.	Advanced Accounting	90%
4.	Advanced Cost Accounting	83%
5.	Accounting Systems	83%
6.	Analysis of Financial Control and Budgeting	76%
7.	Federal and State Income Taxes	59%
8.	Auditing	55%
9.	General Economics	52%
10.	Statistical Methods	48%
11.	Advanced Accounting Problems	45%
12.	Corporation Finance	45%
13.	All Others Below	45%

Of secondary importance and computed on the same frequency basis as that used above, the subjects aligned themselves in the upper one-half of selection preference as follows:

1. Marketing Methods
2. Money and Banking
3. Corporation Finance
4. Investments
5. Social Security Law
6. Business Communication
7. Production Planning and Control
8. Industrial Management
9. Business Law (1 Year)
10. General Economics
11. Statistical Methods
12. Auditing

Inasmuch as some subjects appeared in a preferred position in both of the above alignments, a combination evaluation was effected by the device of awarding two weight points to the subject for each time it was selected as being of primary importance and one weight point when relegated to a position of secondary importance. Thus weighted, the subjects re-aligned themselves somewhat (although not radically) from the original positions. The weighted alignment is as follows:

1. Elements of Accounting
2. Elements of Cost Accounting
3. Advanced Accounting
4. Analysis of Financial Control and Budgeting
5. Advanced Cost Accounting
6. Accounting Systems
7. Auditing
8. General Economics
9. Social Security Law
10. Federal and State Income Taxes
11. Corporation Finance
12. Statistical Methods

Are the Complaints Justified

The puzzling thing is that this list seems to register approval for industrial accounting purposes of a preferential order of courses not markedly at variance from the practice of most schools in preparing students for a *financial* accounting career. When one reviews this result, is there not justification for the question,

> "On what grounds do you base a complaint that our schools are deficient in their training programs in heavily stressing the aspects of financial accounting in preference to those of industrial accounting?"

Comments accompanying survey responses provided a number of answers to this question. The following statement, a small part of what I consider a most excellent commentary covering the generalization being tested, was made by one of the most highly respected industrial accountants in our area and describes advice he gave to his sons who are now students of accounting:

> "To take as many of the management, industrial engineering and organization courses as they could and get some kind of an accounting degree, leaving the straight accounting or C.P.A. work to be picked up by correspondence or night school after they left college. My main reason for this was that I did not want their thinking stereotyped as financial accountants at the start, for I have found it is pretty hard to change the spots of a financial accountant."

This is, in my opinion, the best enunciation of the general attitude of the modern industrial accounting executive who feels that our schools lean too heavily towards the objective of preparing the undergraduate for a career in public or financial accounting rather than the more practical and comprehensive combined field of industrial and public accounting.

The second most frequent subject of comment was the present widely-used "four-year accounting course." Most of the recommendations were to the effect that the time factor should be extended to at least a five-year period. The idea is meritorious, basically, for we must admit that during the past two decades the economy of our nation has placed a tremendously increased burden of responsibility upon the shoulders of the trained accountant, be he in private or public practice. It is not too difficult to conceive that teaching methods are put to a real test in order to keep pace with the demands of governmental agencies, due especially to the great rapidity with which they change. Consider further the demands for specialized information by management, not only in quantity but in a rapidly diminishing time lag between the event and its interpretation.

To me the results of the course preference responses are inconclusive for two reasons. The first and most important is that larger business units may have been slighted, proportionately, in this particular circularization. In most of the smaller businesses the executive in charge of an accounting department is required to administer not only the industrial phases of record keeping but the financial as well. The second reason is that some sort of indoctrination should have been included in the questionnaire, for certainly subject or course content has been changed during the past several years. The answers naturally reflect the earlier student experience of those responding. If the questionnaire had been amplified, no doubt the number of returned questionnaires would have been greatly lessened but the decrease

in quantity would have been more than offset by the more uniform interpretation effected. Further, I am satisfied that there is sufficient interest on the part of all accounting executives—be they affiliated with small, medium, or large concerns—to complete and return a longer and more comprehensive questionnaire in numbers adequate to provide reliable results.

Responses In Category Two

Category two produced the following results: (Group A order is based on a decreasing percentage frequency and Group B on an increasing percentage frequency. In other words, in the case of Group A the most desirable characteristic was given top or first position, while in Group B the least desirable was assigned to the number one spot.)

GROUP A

1. Initiative
2. Moral Character
3. Prior Experience
4. Personal Habits
5. Business Courtesy and Knowledge of Business Ethics
6. Ability to Express Thoughts

GROUP B

1. Ability to Operate Accounting Machines
2. Letters of Recommendation
3. Good Penmanship
4. College Degree
5. Mathematics Beyond High School Level
6. Loyalty to Employer

Viewing the above from an academic point of vantage, I would like to ask the following questions for the purpose of thought stimulation:

1. How could we possibly improve Group A standards through teaching methods?
2. By what means can any employer test for Group A qualities before he has the opportunity to observe the employee under actual working conditions?
3. Should our schools entertain the proposition that they should develop a new kind of service to prospective employers along the lines of evaluating their graduates on degree of attainment toward desirable standards of Group A?
4. Would high standards so developed tend to increase or decrease interest in accounting careers by our young people?

It would be interesting to study the answers one might receive if an equal number of educators and executives were polled. It is quite possible that some of our present "notions" would be disturbed. To me the study results were merely another element of proof that there is room for re-evaluation of the scope of training methods.

The General Section of the Questionnaire

The general section of the survey produced results anticipated by the writer except for the ratio developed in the case of the third question, which seemed to lay stress on individuals rather than studies. Could it be that apparent dissatisfaction with accounting curricula is one of degree only? Some of those returning the questionnaire put forth the contention that the industrial accounting executive is too modest, as well as unaware, of the influence he could exert in giving

(*Continued on page* 95)

THE COST FORUM

ORIENTATION SHOULD PRECEDE ON-THE-JOB TRAINING

Editor, N. A. C. A. Bulletin:

THE TIMELY AND interesting article by Mr. Calvin A. Vobroucek, published in the February, 1951, issue of the Bulletin, entitled "On-the-job Training—After Two Years" depicts a well-planned and thorough training program for accounting personnel. We wish to stress another important phase, not covered in Mr. Vobroucek's article, which we feel is extremely important. That is to provide an extensive orientation period prior to on-the-job training. The purpose of this letter is to show the importance of such an orientation period to one large integrated steel-producing company.

The consolidated operations of this company provide a unique opportunity for comprehensive observation and explanation of a large business and advantage is taken of this in the training program. In planning the program in this company, it is stressed that a trainee's orientation period is a basic prerequisite to the on-the-job training that follows. This element of the program is not just another casual tour or plant visitation. Instead, it follows a rigid schedule lasting approximately seven weeks. During this period the accounting trainees become a part of a large group composed of trainees from many departments including engineering, operations, metallurgical, sales, purchasing, legal and others. The program is developed through the collaboration of all levels of company management.

The orientation phase begins with raw materials. These comprehend iron ore, limestone and coal mining and dolomite quarrying. The group actually goes underground to observe and learn about the latest in mechanized mining and modern cost methods. The trainee next follows the flow of the products which move by company-owned rail transportation facilities to an ore conditioning plant or to a coke and coal chemical plant, and on to the blast furnaces. From there, the product flows to the open hearth furnaces and thence to the various mills for heat treating, finishing and shipping, and the group of trainees carefully observes each process in the conversion to the finished product. At each operation they hear the story of production related by the operator, the metallurgist, and the accountant, always from the ones best qualified to tell it. Production is not the entire story—auxiliaries, foundries, shops, services and utilities are essential and are so presented.

When the seventh week rolls around, the trainee has gained a lasting background of experience upon which may be etched the detailed on-the-job training he is now to receive. Such training will then be viewed in its proper relationship to the entire operation of the company. It has been proven after conducting this program for more than a decade that the trainee acquires knowledge which becomes a most valuable asset in his future years of productive effort. It provides authentic overall knowledge. He gains valuable personal contacts which will serve in expediting later assignments.

Further, the program stimulates an exchange of ideas among trainees of the several departments, which is essential to assure a successful business enterprise. It

creates a cooperative attitude. It provides a basic knowledge at an early stage in the trainee's career, which would require a much longer period to acquire by conventional methods. Experience has taught that the method employed is preferable in order to obtain quicker training and is also less costly to the company.

This orientation is the first and is the most basic and foundation portion of the three sections of the formalized training program. Upon completion of this phase, the trainee is better equipped and steps with more confidence into Section 2, consisting of practice jobs in works accounting, and Section 3 which includes practice jobs in general office accounting.

R. P. BAZEMORE, *Birmingham Chapter*

PUTTING THE PROFIT-VOLUME RATIO TO WORK

Editor, N. A. C. A. Bulletin:

ONE OF HISTORY'S great economists once said: "If (a thing) be useless, the labor contained in it is useless." In our company, our management believes that unless we make our budgeted profit-volume ratio (See N. A. C. A. Research Series No. 17, December 1949, "The Analysis of Cost-Volume-Profit Relationships") work for us on a practical day-to-day basis, we waste most of the labor expended in the semi-annual development of sound operating budgets, with their supplementary break-even charts, profit-volume ratios, etc.

Our company policy provides for issuance of monthly profit and loss statements by commodity or product line. Under our standard cost and budgetary system, actual operating results for each commodity are compared in detail with the monthly budget, *i.e.*, sales, standard cost of sales, variances from standard cost, and profit. It is a simple matter for the controller to explain to management the profit deviation due to higher or lower than budgeted sales. However, the executive organization is also concerned with maintaining or improving budgeted cost and price levels at *any* given volume of sales. By utilizing the profit-volume ratios budgeted for each commodity, we are able to determine the level of earnings *attainable* at the volume of sales actually achieved.

A typical month's commodity profit and loss statement might appear as follows:

	COMMODITY X			
	Actual	% to Sales	Budget	% of Sales
Net sales	$500,000	100.0%	$400,000	100.0%
Standard cost of sales	250,000	50.0	180,000	45.0
Variances from standard cost	(50,000)	(10.0)	(40,000)	(10.0)
Total actual cost of sales	300,000	60.0	220,000	55.0
Gross margin (factory)	200,000	40.0	180,000	45.0
Selling and administration expense	100,000	20.0	80,000	20.0
Net profit before taxes	$100,000	20.0%	$100,000	25.0%

In the above example, the budgeted break-even point for Commodity X is sales of $100,000 and the profit-volume ratio is 33 1/3%. Thus, the budget for the month provided for sales of $300,000 over the point of no gain or loss which, with a profit-volume ratio of 33 1/3%, results in the profit of $100,000 as indicated. By applying the formula to actual sales of $500,000, we determine quickly that attainable profit

at the sales level achieved during the month was $133,000. ($500,000 — 100,000 X 33 1/3%). In our discussions of the operating results with management, emphasis is given to this $133,000 profit attainable at *budgeted cost and price levels*, rather than to a comparison of actual profit with the $100,000 dollar profit budgeted. Too often we have found people at varying levels of management responsibility, who look no farther than the dollar profits achieved and who, in the example illustrated above, would have assumed too quickly that the budgeted profit had been realized.

After establishing that profit in the above example should have been $133,000, our purpose is to explain, in a manner which will focus attention on the area responsible, the deviation evident in the month's actual operating results. Our analysis points out as clearly as possible the factors, both controllable and uncontrollable, responsible for deviation from the budgeted level of earnings, and would include (but not be limited to) comment on the following:

1. Higher or lower than budgeted unit sales prices.
2. Higher or lower than budgeted manufacturing costs.
3. Higher or lower than budgeted prices paid for raw materials.
4. Higher or lower than budgeted distribution costs.

The net effect of these monthly "flash" reports is to give top management the benefit of a quick look at monthly operating results as compared with the budget which has been approved as a basis for planning capital expenditures, sales promotion programs, etc. Where serious deviation from budgeted activity is evident, special detailed studies are submitted. Profit-volume ratios are adjusted for day-to-day use to reflect significant cost changes in areas known to be largely uncontrollable by management, *i.e.*, raw material costs, etc.

Today, with economic conditions changing rapidly as the defense program progresses, the flexible budget and its profit-volume ratio can be of invaluable aid in answering management's questions regarding tomorrow's earnings position. With this measuring tool available to us, our responsibility lies in assuring management of full and efficient use of the tool once established. We are convinced that thorough familiarity with the use (and limitations) of the profit-volume ratio will prove a major step forward for the accountant in making the managerial organization conscious of the need to do a certain volume of business and to control costs in order to attain profit objectives.

R. LESLIE ELLIS, *Lancaster Chapter*

EMPLOYER CONTROL OF UNEMPLOYMENT BENEFIT CHARGES

Editor, N. A. C. A. Bulletin:

THERE ARE MANY FACTORS which contribute to the development of an employer's merit rate under a state unemployment compensation law. The amount of benefits which former employees receive has an important effect on a company's future contribution rates. Careful and detailed checking of unemployment claims and benefit payments will materially aid in reducing the amount of payroll taxes which the employer must pay.

The beginning point of the routine of checking benefit claims is the furnishing of accurate separation information to the state unemployment agency. If the state requires the issuance of separation reports as soon as the employment is terminated, the reports should be issued to the agency immediately. If separation information is furnished on a request basis, all known de-

tails should be forwarded to the state office promptly. If the reason for separation as shown in the employer's records is not clear, it is helpful to discuss the situation with the supervisor or department head concerned, so that complete facts in the case can be shown.

When notification is received that a former employee has filed a benefit claim, the notice should be subjected to detailed verification. The following points should be carefully reviewed:

1. It should be determined whether or not the claim is justified, based on the separation information contained in the records.
2. If the claim is justified, details should be verified, especially with respect to possible errors in computation of weekly benefit amount, maximum benefits, duration of benefits and beginning date of the benefit period.
3. If the state accumulates charges against each employer's reserve account, the maximum amount chargeable against the employer's account (if different from total maximum benefits) may be entered on the allowed claim form as an aid in future checking.
4. The notices of allowed claim should be filed carefully by social security number for future use.

At this point the personnel department should be notified of the benefit claim, with an eye for any possible job openings. If the company has a job available, an offer of work should be immediately made and the local state employment office notified of such offer. Of course, if the employee can be rehired, no further problem exists.

If a check of the records shows that the claim is not justified or that the claimant should be penalized because of a voluntary quit or similar disqualification, a written protest should be filed setting forth all facts. In case of appeal by the claimant, the employer should make certain of being represented at all hearings and that his side of the case is correctly presented. It is well to remember, in connection with disqualifications, that the penalties provided by law may not be enforced against the claimant unless the employer protests and protests within the time limit specified by law. Usually the employer is the only source of disqualifying information, and this information must be conveyed to the state agency.

If the claimant does qualify for benefits, any benefit payments will be charged to the employer's experience record in some manner, depending upon the merit rating plan in use in the particular state. If the state issues notices of charges, the benefit payments should be matched with the employer's payroll records to make sure that benefit payments are not being made to workers presently fully employed. Some method of making notation on the payroll records may be used, so that a glance at the individual earnings record will show what weeks of unemployment have been compensated by benefit payments. In cases in which the state charges the employer's account with actual benefits paid, it is very helpful to record the charges on the individual claim notice. If this is done, it is very simple to guard against payments being made in excess of the maximum allowable.

Notice of charges for benefit payments should be an indication of a need for a review of the individual claimant's situation. The personnel department should be questioned again with regard to any prospects of re-employment. The complete file on the claimant should be reviewed for any possible additional information which may have been received since the date of filing the claim. The company may have received facts in the interim which indicate that the claimant has obtained work elsewhere or that he is no longer available for work. Any such information should be

incorporated in a timely protest to the state agency.

From time to time, it is advisable to review active claims and to be on the alert for any new facts which may affect the claimant's eligibility for benefits. If the state law requires that the claimant be actively seeking work to qualify for benefits, it may be worth while to write the local employment office involved to verify that the benefit recipient is actually attempting to obtain work. When a claimant has received his maximum benefits or his benefit year has expired, the claim notice should be pulled to keep the claim file on a current basis.

Although the control of benefit payments is but one phase of the unemployment compensation, it requires prompt and thorough attention to all details and a good working knowledge of the law. Correct and conscientious handling of this job will very likely result in decreased employer contributions and should be made a part of every company's program of tax-saving.

RICHARD A. BUEHLER, *Columbus Chapter*

ACCOUNTING FOR COST-OF-LIVING WAGE INCREASES

Editor, N. A. C. A. Bulletin:

NUMEROUS COLLECTIVE bargaining contracts have been entered into by industry with labor representatives, under which the so-called "cost-of-living escalator clause" has been adopted. Where this type of agreement is in effect, cost accountants will generally be called upon to establish policy with respect to accounting for the cost of wage increases resulting from the applicability of this clause.

In particular, one of the principal questions to be answered is, "Should the wage increases applicable to direct labor costs be accounted for as direct labor?" In general, two situations can prevail and each must be analyzed in order to establish policy.

1. Where direct laborers are compensated on an hourly rated basis, there are no administrative problems encountered which should prevent the wage increase from being factored into the wage rate which was being paid prior to the wage increase. When the rate increase becomes a part of the hourly rate which will be paid, the wage increase automatically will be accounted for as direct labor.
2. However, where direct laborers are compensated on a piece-work basis, administrative problems immediately present themselves, which might lead the cost accountant to account for the wage increase applicable to direct laborers as an overhead cost. The cost of revising piece-work rates three and four times each year in order to reflect the change in rates might be prohibitive. If this is the case, arrangements should be worked out with employee representatives to pay the rate increases applicable to the "cost-of-living escalator clause" on an hourly basis, if arrangements have not already been completed to pay on this basis in the agreement itself.

Further with respect to the second situation, since paying the wage increase on an hourly basis would also make it administratively impractical to associate the cost directly with individual specifications of product, the wages paid on this basis would be accounted for as manufacturing overhead by the cost accountant. Although greater preciseness of product costs would be sacrificed through this accounting treatment, it is believed that the administrative cost savings resulting therefrom would justify the procedure. A program of factoring the wage increases into the piece-rates at least once a year could be established in order to maintain the system on a somewhat current basis.

If a budgetary control program is in effect, overhead allowances, of course, should be provided for the wage increases applicable to direct labor. No administrative

problems should be encountered in the budget program, since basic data on direct laborers would undoubtedly be available from which the allowances would be determined.

Generally speaking, piece-work rates are established in such fashion that a normal worker, working at a normal pace, will earn a predetermined basic average hourly rate plus a nominal allowance. If this formula is used in estabilshing piece-work rates and the wage increases applicable to "cost-of-living escalator clauses" are factored into the piece rates, the cost of the wage increase will always exceed the cost contemplated on an hourly rated basis. This factor, therefore, should be carefully considered when factoring the wage increase into the piece-work rate.

R. J. MASON, JR., *Muskegon Chapter*

THE NEED FOR COURSE MATERIALS ON DISTRIBUTION COSTS

Editor, N. A. C. A. Bulletin:

MORE AND MORE EMPHASIS is being placed upon the proper analysis and control of distribution costs and has pointed up the fact that few cost accountants have adequate training to do a comprehensive and competent job in this area. The same point can be made with respect to marketing men as well. The situation may be due to the hesitency on everyone's part to take the iniative on this highly controversial subject.

However, the need for the reduction and control of distribution costs is so urgent that early training is as much a requirement for this type of work as any other. Efforts are now being made in a few of our leading colleges and universities to teach such a course to marketing majors, accounting majors, or both. Due to the dearth of good theoretical as well as practical material, efforts are generally limited to introducing the student to the subject and pointing out the necessity for such work. Only through the whole-hearted cooperation and support of cost accountants and marketing men can early training of this type, at the university level, be effective. Suggestions as to course content, case material, and written results of individual company efforts in this field are much needed and may make the difference between a course in which the professor "bats the breeze" and one which farms out a trained student qualified to step into a company organization and do a reasonably good job.

It would seem that the material could be broken down into two logical divisions, internal analysis and external analysis. The internal analysis would undoubtedly deal with the use of facts which can be obtained from company records, the proper way to devise forms and procedures, and the intelligent interpretation of this information, so that the maximum benefit will be secured at minimum cost. External analysis of market situations could be presented in the form of a complete program of distribution cost reduction and control. This would undoubtedly reflect market research performed by members of company organizations or independent consultants.

The purpose of the course in distribution costs, for which material is sought, should be to give the student a good theoretical approach supplemented with actual cases which are well-written and state the facts clearly and concisely. In addition, the marketing and accounting phases should be equally emphasized in order that the student will be able to assist in developing a balanced program of distribution cost reduction and control in whatever concern he may do this type of work.

WAYNE S. OVERMYER, *Cincinnati Chapter*

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aid to our educators to help them achieve a more comprehensive training program. Others proposed on-the-job training in industry during a student's undergraduate days as highly desirable in that it would enable the embryo accountant to better appraise the possibilities of both major fields of accounting, thus tending to decrease personnel turnover, a costly item to the employer.

Conclusion

Though limited in its scope, I believe the study made brings forth a conclusion that there is some basis for discontent with accounting training in colleges. I think consideration should be given to the idea that an extension of the study would produce a re-evaluation of the subjective phases of modern methods of training potential accountants. It might tend toward equalizing the claimed over-stressing of financial accounting background in favor of the industrial.

Coming Articles IN THE **N.A.C.A. BULLETIN**, OCTOBER 1951

Comprehensive Budgetary Control—A Case Study
by FRANK Z. OLES

Budgets Are For Planning, Coordination and Control
by HERMAN C. HEISER

Measuring Activity and Capacity for Budgetary Control
by THOMAS R. TORIAN

Forecast Budgeting for a Multiplant Operation
by WILLIAM J. TAGTMEIER

How Much Do Indirect Expenses Vary?
by NELSON J. BOWNE and B. BURT TITUS

Budgetary Control Works at Square D Company
by A. A. KASPER

Simplifying the Detail Side of Expense Control
by H. C. ARNOLD

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by COLIN I. PARK

Working Papers for the Operating Budget
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